

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1939 F

98
A-80-40
IV-F-10

MEMORANDUM

DATE: March 19, 1984

TO: Docket A-80-40
(Arsenic NESHA)

FROM: Roy Manley
Pacific Environmental Services, Inc.

SUBJECT: Documentation Concerning the Public Workshop
Held August 16, 1983, at Tacoma, Washington

The documents attached were generated or used at the public arsenic workshop held August 16, 1983, at Tacoma, Washington. The following list describes the attached documents:

TO	FROM	DATE	DESCRIPTION
---	----	August 16, 1983	Sign-in record for Workshop attendees
Public	EPA William Ruckelshaus	June 22, 1983	Excerpt of speech by William Ruckelshaus to the National Academy of Science
Public	EPA Washington, D.C.	July 12, 1983	News Release: "Environmental Information" relevant to the arsenic standards
Public	EPA Region X	July 12, 1983	News Release on the proposed standards
Public	EPA Region X	August 1983	Announcement of the Tacoma public hearing on the standards

AR 18.3.6 0004

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

19417

2

TO	FROM	DATE	DESCRIPTION
----	----	August 16, 1983	Sign-in record for workshop attendees
ASARCO	Public	1983	ASARCO Publication on the proposed standard
----	----	----	Diagrams of the ASARCO smelter process
----	----	----	Fact Sheet on Best Available Technology
Kai N. Lee University of Washington at Seattle	Administrator EPA Region X	August 18, 1983	Discussion and critique of the August 16, 1983, workshop
EPA Lori Cohen (recorder)	----	August 16, 1983	Questions and issues raised at the workshop
EPA	Public (14 separate replies, see attached index)	August 1983	Public comment forms completed at or following the workshop
----	----	August 16, 1983	Audio tapes of the workshop proceedings (original and complete tapes are kept in the docket in Washington, DC)

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1994

3

Public comment forms received following the close of the workshop
August 16, 1983.

Number

Name

IV-F-10a
IV-F-10b
IV-F-10c
IV-F-10d
IV-F-10e
IV-F-10f
IV-F-10g
IV-F-10h
IV-F-10i
IV-F-10j
IV-F-10k
IV-F-10l
IV-F-10m
IV-F-10n

(b) (6)

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1942

DATE: 8/18



From the Office of
THE REGIONAL ADMINISTRATOR

		INFORMATION
		CONTROL
		ACTION
		FILE
		COMMENTS
	BARNES	
	COATE	
M/S 601	RA/DRA SECY	
M/S 601	DOUGHERTY	
M/S 634	NEILSON	
M/S 634	HAGENSEN/SECY	
M/S 634	BLISS	
M/S 634	FRANKEL/SECY	
M/S 613	MOORE/SECY	
M/S 529	SMITH/SECY	
M/S 437	BURD/SECY	
M/S 334	O'NEAL/SECY	
M/S 305	McGEE/SECY	
M/S 541	LIBRARY	
A00	KREIZENBECK	
I00	McKEE	
000	VLASTELICIA	
W00	EWING	

File
Maria -
Ms. make
cc's for
Coate
A. Smith
R. Smith
S. Hall
and original
to source for
docket.
RS

ENVIRONMENTAL PROTECTION AGENCY
Region X
1200 Sixth Avenue N/S 601 Seattle, Washington 98101

ADMINISTRATIVE REMOVAL

ASA218

1943

UNIVERSITY OF WASHINGTON
Seattle, Washington 98195

Institute for Environmental Studies

18 August 1983

MEMORANDUM FOR the Regional Administrator

SUBJECT: 16 August Tacoma Workshop

The Tacoma workshop was a suboptimized success: it worked well, but it raised questions about how well this kind of effort can work. EPA was cool, open, and sophisticated. You and your staff were excellent in describing a clear decision process for an unclear decision. The audience understood the message. Given their divided interests in the outcome, however, understanding what you are up to and what you are up against does not make them feel more confident in the outcome. That is the suboptimal part.

Doing something well enough to want to do better is, in itself, good: learning is going on. I do not have convincing suggestions for improvement. I do have some suggestions(!)

First, a mea culpa; a criticism of some experimental novelists is that they portray boredom boringly. Barnes vs. Lee on uncertainty illustrated well that uncertainty can be described without creating more uncertainty. I may have characterized the perplexity felt by the workshop participants accurately, but I did it abstrusely, confusingly. You picked up the saving grace -- that democratic decision is the work of many hands, not all working in harmony. I'm chagrined at my awkwardness, but at least I did not step on the straight line.

My suggestions have to do with what comes next:

1. With the stretchout in the time schedule, an additional public occasion (but not a formal hearing) would be helpful. The August workshops provide a forum for EPA alone. That is appropriate for commenting on EPA's proposed regulation, but inadequate for acknowledging the spectrum of concerns that people bring to the smelter and its arsenic. I suggested to Doug Sutherland that he convene a forum on behalf of the city of Tacoma -- a meeting at which knowledgeable voices besides EPA's could be heard, information could be shared, but position-taking would be discouraged (though not forbidden). If he should pick up the suggestion, I hope you will be supportive.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1944

Mrs. Ernesta Barnes

18 August 1983

2. Down the line, when the Administrator issues a final regulation, it should be accompanied by a brief but reasonably full justification, including discussion of a) how public comment affected the outcome; b) how the technical data and models changed between the draft and final regulation; c) what has been learned about the process of consulting the public on cases involving technical uncertainty.
3. It has been hard to communicate some important facts:
 - the levels of general exposure are so low that only a slow, cumulative impact like lung cancer need be considered;
 - cigarette smoke is a synergistic factor in arsenic-caused lung cancer;
 - the Ruston smelter is the only facility covered by this section of the arsenic standard;
 - Asarco has already agreed to install BAT as defined in the draft;
 - there is a parallel effort at cleanup via Superfund, but it is unlikely to be fully implemented unless Congress changes the funding levels.

These should all be crisply summarized in the final regulation.

As I confessed earlier, taking these steps does not promise either more trust or more confidence in EPA. What it would take for the general public and media to appreciate what this process has done is mainly a matter of putting it in context. One participant said to me at the workshop that he did not believe your statement that you felt little pressure to accede to Asarco's economic claims. He was surprised when I observed that EPA had already taken a lot of heat; that since you had persevered in the face of this adverse publicity, you were unlikely not to be pressured. How to communicate this context, of government in the fishbowl, still needs hard thinking.

Harder still, EPA should reflect upon whether any decision taken under the uncertainties that cloud this one deserves much confidence, internally or by the public. There will be time to do this later, but I point it out now because it influences expectations of success.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1945

Mrs. Ernesta Barnes

18 August 1983

In the meantime, you and your staff are to be congratulated for your articulate good faith and the technical foundation on which it rests. I am excited to be involved.

Kai N. Lee
Associate Professor
Environmental Studies
and Political Science

cc: L. Edwin Coate
Alex Smith
Randy Smith
Susan Hall
Dean Gilbert S. Omenn

RECEIVED
AUG 23 1983

NR & HAZARDOUS MATERIALS DIV.

RECEIVED

AUG 18 1983

OFFICE OF
REGIONAL ADMINISTRATOR

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1946

Excerpt from EPA Speech June 22, 1983

SCIENCE, RISK AND PUBLIC POLICY

...EPA is an instrument of public policy, whose mission is to protect the public health and environment in the manner laid down by its statutes. That manner is to set standards and enforce them; and our enforcement powers are strong and pervasive. But the standards we set, whether technology or health-related, must have a sound scientific base.

Science and the law are thus partners at EPA, but uneasy partners. It's a shotgun wedding. The main reason for the uneasiness lies, I think, in the conflict between the way science really works and the public's thirst for certitude that is written into EPA's laws.

...But EPA's laws often assume, indeed demand, a certainty of protection greater than science can provide at the current state of knowledge. The laws do no more than reflect what the public believes and what it often hears from people with scientific credentials on the 6 o'clock news. The public thinks we know what all the bad pollutants are, precisely what adverse health or environmental effects they cause, how to measure them exactly and control them absolutely. Of course, the public and sometimes the law are wrong, but not all wrong. We do know a lot about some pollutants and we have controlled them effectively using the tools of the Clean Air Act and the Clean Water Act. These are the pollutants for which the scientific community can set safe levels and margins of safety for sensitive populations. If this were the case for all pollutants, we could breathe more easily (in both senses of the phrase); but it is not so.

...It will not be easy, because we must now deal with a class of pollutants for which a safe level is difficult, if not impossible, to establish. These pollutants interfere with genetic processes and are associated with the diseases we fear most: cancer and reproductive disorders, including birth defects. The scientific consensus has it that any exposure, however small, to a genetically active substance embodies some risk of an effect. Since these substances are wide-spread in the environment, and since we can detect them down to very low levels, we must assume that life now takes place in a minefield of risks from hundreds, perhaps thousands, of substances. No more can we tell the public: you are home free with an adequate margin of safety.

This worries all of us, and it should. But when we examine the premises on which such estimates of risk are based, we find a confusing picture. In assessing a suspected carcinogen, for example, there are uncertainties at every point where an assumption must be made: in calculating exposure; in extrapolating from high doses where we have seen an effect to the low doses typical of environmental pollution; in what we may expect when humans are subjected to much lower doses of the same substance that caused tumors when given in high doses to laboratory animals; and finally, in the very mechanisms by which we suppose the disease to work.

Excerpts from a speech by William D. Ruckelshaus, Administrator, Environmental Protection Agency, to the National Academy of Sciences on June 22, 1983.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1947

One thing we clearly need to do is insure that our laws reflect these scientific realities. The Administrator of EPA should not be forced to represent that a margin of safety exists for a specific substance at a specific level of exposure where none can be scientifically established. This is particularly true where the inability to so represent forces the cessation of all use of a substance without any further evaluation.

...My purpose is to speak of risk assessment and risk management and science's role in both. It is important to distinguish these two essential functions, and I rely here on a recent National Academy of Sciences report on the management of risk in the Federal government. Scientists assess a risk to find out what the problems are. The process of deciding what to do about the problems is risk management. The second procedure involves a much broader array of disciplines, and is aimed toward a decision about control.

Risk management assumes we have assessed the health risks of a suspect chemical. We must then factor in its benefits, the costs of the various methods available for its control, and the statutory framework for decision. The NAS report recommends that these two functions be separated as much as possible within a regulatory agency. This is what we now do at EPA and it makes sense.

I think we also need to strengthen our risk assessment capabilities. We need more research on the health effects of the substances we regulate. I intend to do everything in my power to make clear the importance of this scientific analysis at EPA. Given the necessity of acting in the face of enormous scientific uncertainties, it is more important than ever that our scientific analysis be rigorous and the quality of our data be high. We must take great pains not to mislead people regarding the risks to their health. We can help avoid confusion both by the quality of our science and the clarity of our language in explaining the hazards.

...I am sure that in the future, this being an imperfect world, the rigor and thoroughness of our risk analyses will be affected by many factors, including the toxicity of the substance, the populations exposed, the pressure of the regulatory timetable, and the resources available.

Despite these often conflicting pressures, risk assessment at EPA must be based on scientific evidence and scientific consensus only. Nothing will erode public confidence faster than the suspicion that policy considerations have been allowed to influence the assessment of risk.

Although there is an objective way to assess risk, there is, of course, no purely objective way to manage it, nor can we ignore the subjective perception of risk in the ultimate management of a particular substance. To do so would be to place too much credence in our objective data and ignore the possibility that occasionally one's stomach is right. No amount of data is a substitute for judgment.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

Further, we must search for ways of describing risk in ways the average citizen can comprehend. Telling a family living close to a manufacturing facility that no further controls are needed on the plants's emissions because, according to our linear model their risk is only 10-6, is not very reassuring. We need to describe the suspect substances as clearly as possible, tell people what the known or suspected health problems are and help them compare that risk to those with which they are more familiar.

To effectively manage the risk, we must seek new ways to involve the public in the decision-making process. Whether we believe in participatory democracy or not it is a part of our social regulatory fabric. Rather than praise or lament it, we should seek more imaginative ways to involve the various publics impacted by the substance at issue. They need to be involved early on and they need to be informed if their participation is to be meaningful. We will be searching for ways to make our participatory process work better.

* For this to happen, scientists must be willing to take a larger role in explaining the risks to the public--including the uncertainties inherent in any risk assessment. Shouldering this burden is the responsibility of all scientists, not just those with a particular policy end in mind. In fact all scientists should make clear when they are speaking as scientists--ex cathedra--and when they are recommending policy they believe should flow from scientific information. What we need to hear more of from scientists is science...Our country needs the clear unbiased voice of science.

...Lest anyone misunderstand, I am not suggesting that all the elements of managing risk can be reduced to some neat mathematical formula. Going through a disciplined approach can help. It will assist in organizing our thoughts to include all the elements that should be weighed. We will build up a set of precedents that will assist later decision-making and provide more predictable outcomes for any social regulatory programs we adopt.

It is clear to me that in a society in which democratic principles so dominate, the perceptions of the public must be weighed. Instead of objective and subjective risks, the experts sometimes substitute "real" and "imaginary" risks. There is a certain arrogance in this -- an elitism which has ill served us in the past. Rather than decry the ignorance of the public and seek to ignore their concerns, our governmental processes must accomodate the will of the people and recognize its occasional wisdom. As Thomas Jefferson observed:

"If we think (the people) not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion."

1948

A FACT SHEET ARSENIC CONTROLS

WHY THE SPECIAL ATTENTION FOR ASARCO'S TACOMA SMELTER?

The ASARCO smelter in Tacoma uses copper ore concentrate with a much higher arsenic content than any other U.S. copper smelter. Arsenic makes up about four percent of the ore at Tacoma; no other copper smelter uses ore concentrate with more than 0.6 percent.

Arsenic is a commercially valuable by-product of the Tacoma operation. The smelter is the only U.S. manufacturer of arsenic and arsenic trioxide; it produces one-third of all arsenic used in the country.

WHAT IS EPA PROPOSING FOR THE TACOMA SMELTER?

There are three principal phases in the smelting process that transforms raw ore into blister copper. (1) The ore is first run through a roaster as an initial step in gradually removing impurities. (2) What emerges from the roaster is run through a reverberatory furnace. (3) The molten mixture from the furnace is then sent to converters. EPA seeks to reduce the emissions of arsenic that escape capture in the third step, e.g., the converting process.

EPA is proposing that additional hoods be placed on the converters so that ASARCO would capture and collect "fugitive" arsenic given off during this third stage in removing impurities from the copper.

The EPA proposal would include a standard expressed in terms of equipment specifications for the collection device. The criterion used by EPA in designing this standard is what is called the "Best Available Technology", or BAT. BAT means the best controls available considering economic, energy, and environmental impacts. BAT is the minimum level of control which EPA would require for hazardous air pollutants such as arsenic.

IS THE PROPOSED "BEST AVAILABLE TECHNOLOGY" INDEED THE BEST ASARCO CAN DO?

One of the chief issues during the public hearing/public comment process is whether EPA's proposed standard does, in fact, represent the very best control technology available to ASARCO. Are there other operations or practices at the smelter where additional control can be employed to reduce emissions of arsenic?

There have been discussions among air pollution control engineers involved in the ASARCO-arsenic issue that other measures may exist which can be applied to produce even greater reductions in ASARCO's arsenic emissions. One example which has been suggested has been baghouse controls on the reverberatory furnaces which may play a major role in reducing the amount of arsenic which now escapes.

Other suggestions have been made that ASARCO may be able to reduce fugitive emissions throughout the smelter and that consideration be given to require ASARCO to use ore concentrate with a lower arsenic content. The feasibility of such requirements and the quantification of emission reduction and cost is the subject of an ongoing EPA task force effort. Comments from the public are encouraged and welcomed.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1950

WHAT WOULD EPA'S PROPOSED CONTROLS COST ASARCO?

EPA has estimated that it would cost ASARCO \$3.5 million to install the hooding equipment required by the proposed controls, and that the annual cost to operate the equipment would be \$1.5 million. Operation of the equipment is expected to increase the smelter's annual energy consumption by one-half of one percent over the 2.9 billion kilowatt hours of electricity the smelter now uses each year. EPA has estimated that its proposed controls could result in an increase in the price of copper by approximately 0.8 percent if the company chose to maintain its normal profit margin. The cost may be higher if additional or alternative controls are found to be necessary.

IS SHUTDOWN OF THE SMELTER A POSSIBILITY?

Yes, it is a possibility.

Regulation of hazardous air pollutants such as arsenic is required by Section 112 of the Clean Air Act. The only absolutely safe approach to setting standards for substances which cause cancer would be to set a standard that would reduce the emissions to zero. In setting standards previously for two other cancer-causing air pollutants, asbestos and vinyl chlorides, EPA promulgated standards that did not require shutdown of facilities that released those pollutants to the ambient air.

EPA can impose standards that go beyond Best Available Technology if, in the language of the statute, it is necessary "to protect the public health....with an ample margin of safety."

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1951

A FACT SHEET

SUPERFUND AND ASARCO

WHAT IS SUPERFUND?

Superfund is the Federal program that allows EPA -- with the participation of State governments -- to respond directly to releases (or threatened releases) of hazardous substances and pollutants or contaminants that may endanger public health or welfare. The program was set up by the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The law is referred to as "CERCLA", or, more popularly, as the Superfund law because it created a \$1.6 billion fund to deal with problems resulting from hazardous materials in the environment.

HOW DOES SUPERFUND COME INTO PLAY?

In April 1983, the Washington Department of Ecology (DOE) signed an agreement with EPA that called for DOE to lead a \$1.4 million EPA-funded investigation of contamination by hazardous chemicals in an area described as the Commencement Bay Nearshore/Tideflats area. The area includes Ruston, site of the ASARCO smelter. A sum of \$100,000 will be devoted to investigate contamination in Ruston, Maury Island and Vashon Island. Soils in those vicinities are known to contain arsenic and cadmium in amounts that have prompted the Tacoma-Pierce County Health Department and the Seattle-King County Health Department to issue warnings about the consumption of garden vegetables grown in contaminated soils.

WHAT IS THE OBJECT OF THE SUPERFUND INVESTIGATION?

The investigation, to be managed by DOE and the Tacoma-Pierce County Health Department, will attempt to establish the pathways by which arsenic finds its way into the urine of school children. There are a number of suspected pathways: household dust, windblown dust from unpaved lots and roads, vegetable intake, playground soil and smelter emissions. DOE and the health department will attempt to determine the most significant pathways. According to the current schedule, the investigation should be completed by November 1984. Once the pathways are established, EPA has the authority to order the source of the contamination, if known, to take corrective action that will eliminate the risk to health. If a source of the contamination refused to undertake the clean-up, EPA has the legal authority to do the job itself with the understanding that all costs incurred must be repaid to EPA by the source.

WHAT IS SUPERFUND'S RELATIONSHIP TO THE PENDING EPA PROPOSAL?

The pending EPA proposal to place new restrictions on arsenic emissions from ASARCO is separate from the Superfund program, although the two have similar goals. The proposal has as its objective the reduction of arsenic from current and future smelter emissions. The Superfund program is directed toward reducing the health and environmental risks posed by the historic build-up of arsenic in the soil.

Until the joint DOE-health department Superfund investigations are completed, what should or can be done to remedy the historic deposit of arsenic in the soils will not be known. Any cleanup action, however, will be planned with the help of the public. An advisory group is being formed, and will begin meeting soon. For more information about the public's involvement with Superfund activities, contact Derek Sandison of the Tacoma-Pierce County Health Department at (206) 593-4750.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1952

A FACT SHEET

THE RISK TO PUBLIC HEALTH

Arsenic, in its inorganic form, has long been known as an acute poison to humans when ingested in relatively large amounts. However, more recent data have shown that exposure to lower levels of arsenic results in skin and lung cancer in humans. For cancer-causing substances, such as inorganic arsenic, scientists are unable to identify a safe level of exposure. Therefore, EPA and other federal agencies have taken the position that cancer may occur at any level of exposure to arsenic no matter how low, with the risk of cancer increasing as exposure increases.

For the purpose of developing its arsenic regulation, EPA has determined that the ASARCO smelter should be controlled at a minimum to the level that reflects best available technology (BAT) and to a more stringent level if necessary to prevent health risks that are unreasonable. This approach requires that EPA estimate the cancer risk remaining for the population after these controls are in place and then determine if the remaining cancer risk is acceptable, taking into account the costs and technical feasibility of reducing the risk further.

To calculate this remaining risk, EPA combined data from two different types of analyses. The first analysis provides what is known as the unit risk number. This number is defined as the lifetime lung cancer risk that would occur in a population which is exposed throughout their lifetime to one microgram per cubic meter of arsenic in the air they breathe. (A microgram is equal to about 1/28 millionth of an ounce and a cubic meter is about the same as a cubic yard. Therefore, one microgram per cubic meter is about 1/28 millionth of an ounce of arsenic in a cubic yard of air.) This unit risk number is calculated by using data from studies of workers who were exposed to arsenic in smelters and at a pesticide manufacturing plant.

The second analysis estimates the exposure for residents living near the smelter. This is done with mathematical models. Utilizing data on emissions of arsenic from the ASARCO smelter as well as information on weather and geographic conditions, a dispersion model is used to calculate the concentration of arsenic expected at over one hundred locations within approximately 12 miles of the smelter. Combining these exposure estimates with population data from the Bureau of Census gives an estimate of the number of people exposed to various concentrations of arsenic within about 12 miles of the smelter. This 12 mile distance was chosen because the mathematical models used tend not to be as accurate at a greater distance. (While our analysis stops at about 12 miles, it must be realized that risk from exposure to arsenic emissions extends beyond this distance, though at a reduced level.)

By multiplying the unit risk number and the estimated exposure for people living around the smelter, it is possible to make an estimate of the cancer risks expected in the ASARCO community as a result of arsenic exposure. For those people living within one mile of the smelter, the lifetime cancer risk remaining after controls have been installed would be about 0.2%. This is in addition to the normal lifetime cancer risk of about 20% that would be expected without arsenic exposure. Within the 12 mile area this excess life-time cancer risk, after controls are installed, would be 0.004%. Another way of expressing this risk is by using lung cancer incidence numbers. Lung cancer incidence is the expected number of lung cancer cases that would result each year from arsenic exposure within 12 miles of the smelter. Without additional controls, the estimated lung cancer cases are approximately 4 per year. After the proposed controls were installed, the estimated number would drop to approximately one per year. To keep this in perspective, these numbers should be compared to the several hundred lung cancer deaths that are normally expected each year in a population the size of that found within this 12 mile radius.

UNCERTAINTIES IN RISK CALCULATIONS

The process of calculating these risks for the population around the smelter involves many assumptions and uncertainties. So while these estimates of risk are a useful tool in the decision-making process, MUCH CAUTION SHOULD BE EXERCISED TO AVOID RELYING TOO HEAVILY ON THE NUMBERS PRESENTED ABOVE. These numbers have considerable uncertainty for the following reasons:

1) MODELING ASSUMPTIONS - Measurement of air concentration of arsenic around the ASARCO plant have not been done thoroughly; however, the measurements that have been obtained indicate lower concentrations than those predicted by the dispersion model. Arsenic emissions data from the smelter used in the dispersion model are not precise. In many cases these emission rates were based on assumptions rather than actual emission tests. This is especially true for fugitive emissions which are very important in calculating concentration yet are very difficult to measure. Also, estimates of how these arsenic emissions mix with the ambient air are hard to determine because of the complex geography and lack of specific weather data for the area around the smelter. These problems may explain why the ambient monitoring around the smelter shows lower concentrations of arsenic than EPA's dispersion model predicts.

2) EXPOSURE ASSUMPTIONS - A principal assumption is that all persons living within the 12 mile radius of the smelter will remain in the same location for a 70 year lifetime and are exposed to a constant, average concentration of airborne arsenic. This assumption could result in large overestimates of arsenic exposure for those who spend a lot of time away from their residences and in underestimates for workers employed at the smelter. Additionally, exposure to arsenic from resuspension of arsenic bearing dusts from city streets, empty lots, and playgrounds has not been taken into consideration.

3) UNIT RISK NUMBER - Because arsenic is a carcinogen, it was assumed that a linear relationship exists between exposure and risk. Simply stated, this means that a person who inhales one microgram of arsenic per cubic meter of air is one-tenth as likely to get cancer as a person who inhales ten micrograms per cubic meter. If the relationship between exposure and risk is not linear, a different unit risk number could result which would in turn change the lung cancer risk estimates made for the population around the smelter. It is unlikely that the actual cancer risks would be higher than those predicted by EPA, but they could be substantially lower.

EPA is now in the process of reviewing the data used in calculating risk estimates, especially those data which relate to arsenic emissions and dispersion modeling. If necessary, new data will be developed in these areas to permit EPA to better estimate risks to the smelter community.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1954

United States
Environmental Protection Agency
Region X (M/S 605)
1200 Sixth Avenue
Seattle, WA 98101
Special Business
Penalty for Private Use \$300
An Equal Opportunity Employer



Postage and Fees Paid
U.S. Environmental Protection Agency
EPA - 335



News Release

83-51

Contact: Bob Jacobson
(206) 442-1203

July 12, 1983

FOR RELEASE AFTER 1 P.M. (PDT), TUESDAY, JULY 12

Today's proposal by the U.S. Environmental Protection Agency to curtail emissions of inorganic arsenic at the ASARCO smelter in Tacoma triggers a comment period during which the public will have an important role in determining exactly what level of pollution controls will provide "an ample margin of safety to protect public health," according to Ernesta B. Barnes, EPA's Northwest regional administrator.

"That phrase -- 'an ample margin of safety' -- is the critical issue in the upcoming public comment period on the EPA proposal," Barnes said. "In making the proposal, EPA is openly acknowledging that our proposed controls for ASARCO will not eliminate risks to health, but will only reduce them.

"The question facing citizens affected by the ASARCO arsenic emissions is whether the reduced health risk is acceptable."

Inorganic arsenic is a probable carcinogen, said Barnes, and therefore can be assumed to present risks at any level of exposure. There is no defined threshold at which risks begin to occur. EPA's policy toward such non-threshold pollutants is that -- as a minimum requirement -- their emissions be reduced by the best control technology available.

(more)

ADMINISTRATIVE REMOVAL

ASA218

1955

-2-

Barnes also said that EPA will go beyond that minimum criterion of "best available control technology" if necessary to prevent an unreasonable risk to public health.

"During the upcoming public comment period, EPA is encouraging people within the 12.5 mile radius of the smelter to help decide what is an 'acceptable' or 'reasonable' health risk," Barnes said. "In addition, EPA will be soliciting the comments of knowledgeable parties -- ASARCO officials and employees, the engineering community, State and local air pollution control agencies -- who are in the best position to tell EPA whether our proposal does, indeed, represent the best available control technology."

The EPA proposal calls for ASARCO to place hoods on the converters used in the smelting process, a move that would cost ASARCO an estimated \$3.5 million in installation costs and an estimated annual operating cost of \$1.5 million. Use of the hoods is expected to reduce ASARCO's annual emissions of inorganic arsenic from 310 tons to 189 tons.

"Does that requirement constitute the very best control technology available to ASARCO? -- that's what we want to learn during the comment period," Barnes said. "Are there other operations or practices at the smelter where further controls can be employed to reduce emissions of inorganic arsenic?"

Barnes added that ASARCO's ongoing emissions of inorganic arsenic may be only part of the public health risks faced by people living downwind from the smelter.

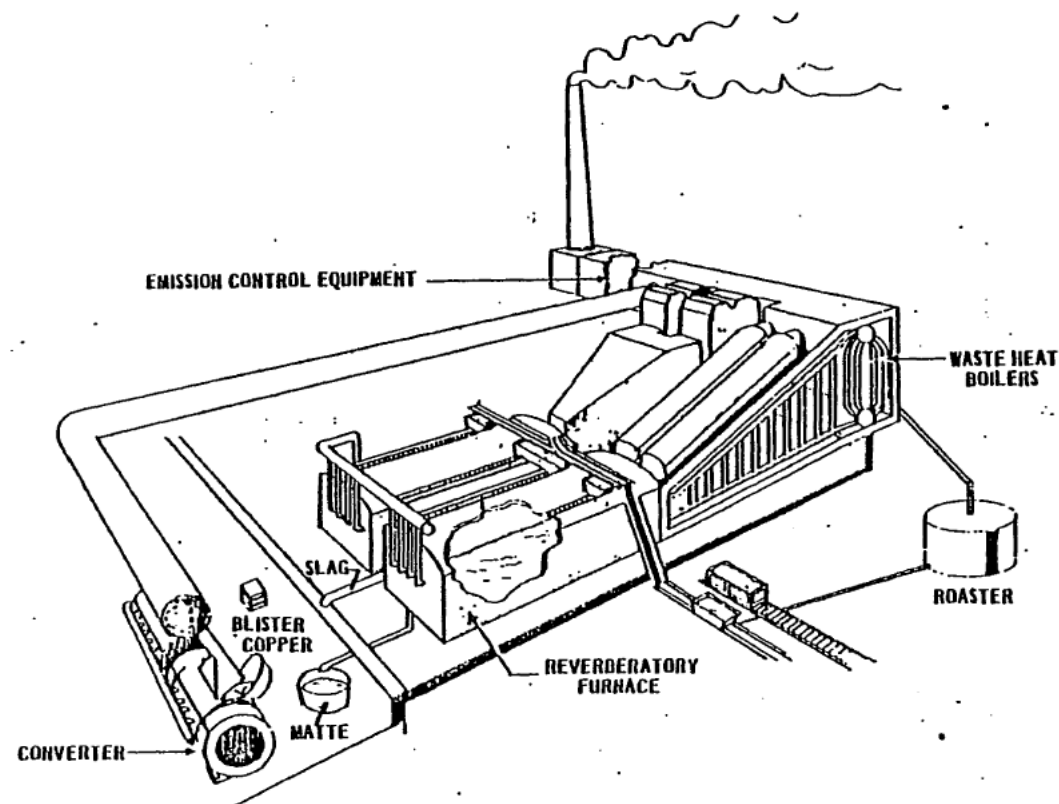
"Public health officials are concerned by the deposits of arsenic over the years," Barnes said. "Even with future decreases in the amount of arsenic from ASARCO, arsenic concentrations in the soil surrounding the smelter will remain high."

Barnes said the public hearing on EPA's proposal will be held from noon to 10 p.m. on Tuesday, August 30, in the Rotunda Room of the Tacoma Bicentennial Pavillion at 1313 Market Street.. A second day of hearings will be held, if necessary, at the same location on the following day.

Between now and then, Barnes said EPA will conduct public workshops, probably in early August, to acquaint people in Tacoma and nearby Vashon and Maury Islands with details of the EPA proposal and to help them prepare testimony for the hearing. Times and places for the workshop will be announced as soon as arrangements are made.

More information about the hearings and the workshops may be obtained from Laurie Kral, Air Programs Branch (Mail Stop 532) EPA, 1200 Sixth Avenue, Seattle 98101, or by calling her at (206) 442-1089.

#



Primary Copper Smelter

0-16-985

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

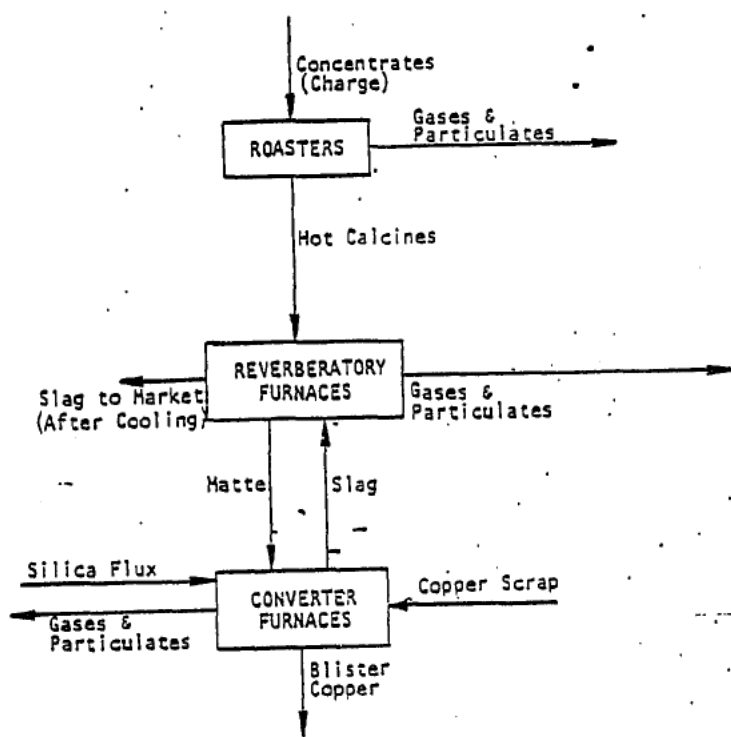
1956

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1957



BASIC SMELTING PROCESS USED AT THE TACOMA SMELTER

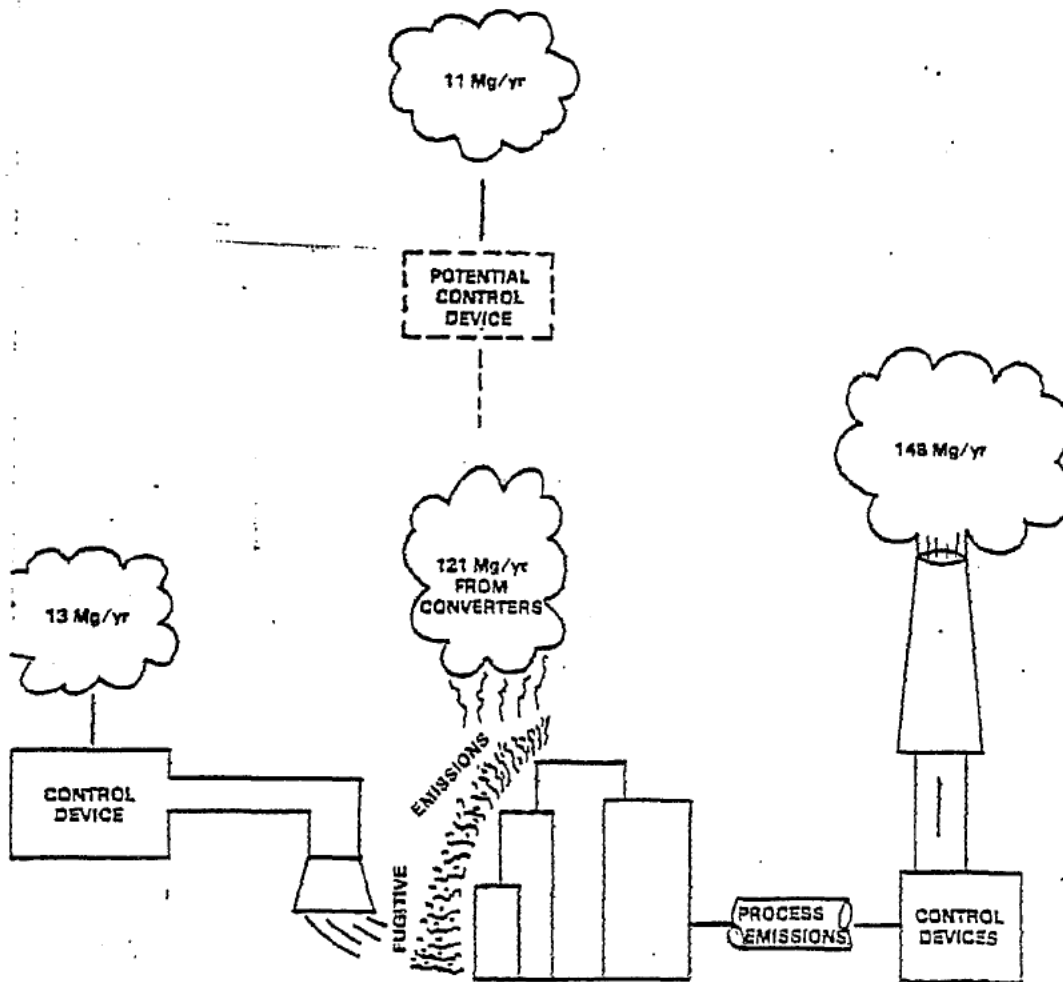
Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1958

EMISSIONS FROM ASARCO/TACOMA

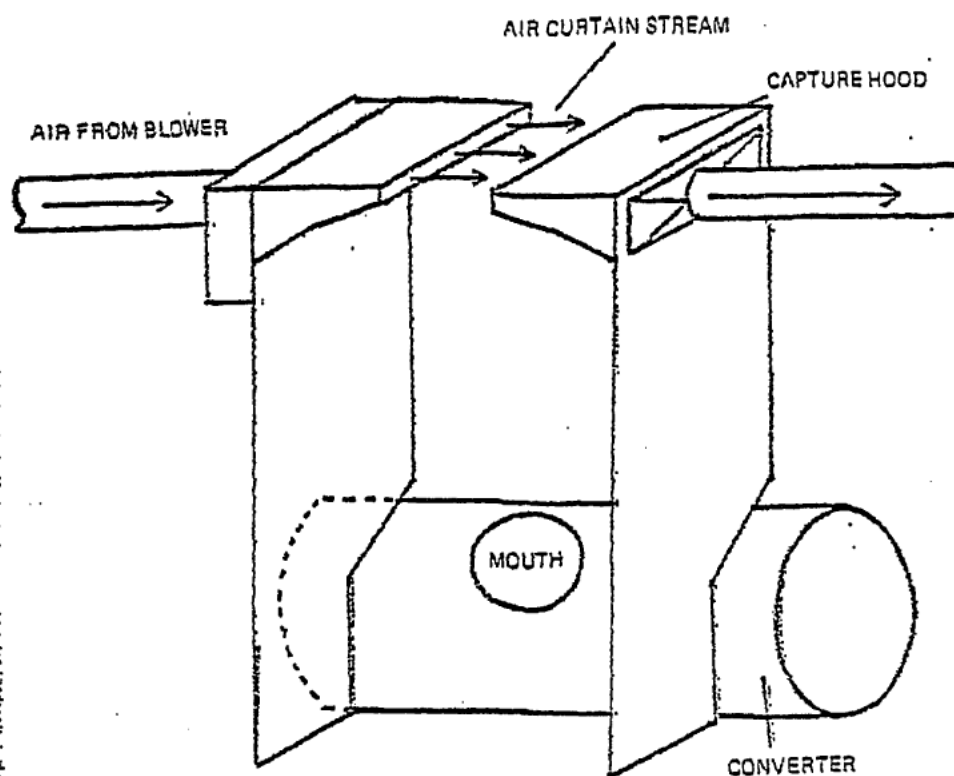


Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

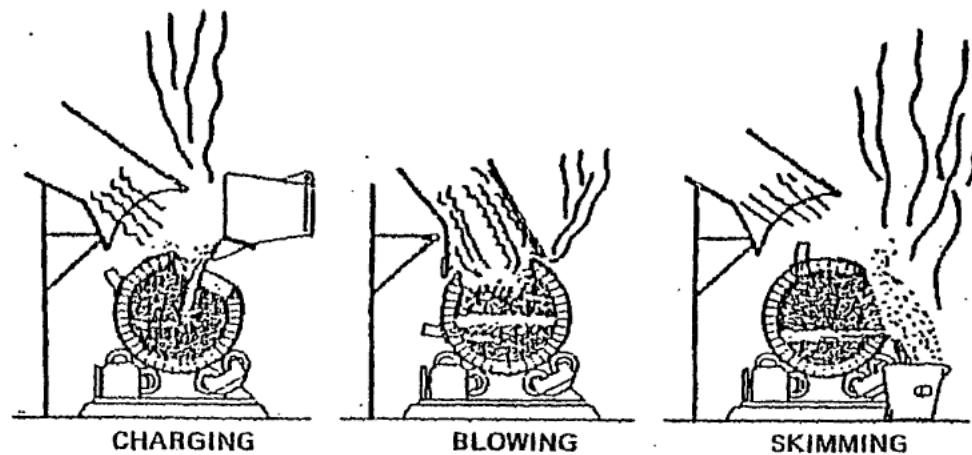
ADMINISTRATIVE REMOVAL

ASA218

1959



CONVERTER FIXED ENCLOSURE/AIR CURTAIN (OPEN)



COPPER CONVERTER OPERATIONS

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1960



Environmental Information

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

FOR RELEASE: TUESDAY, JULY 12, 1983

(202) 382-4355

EPA PROPOSES STANDARDS FOR INORGANIC ARSENIC EMISSIONS

U.S. Environmental Protection Agency Administrator

William D. Ruckelshaus today proposed standards intended to reduce industrial emissions of inorganic arsenic, a substance linked to human skin and lung cancer.

EPA estimates inorganic arsenic emissions from significant sources in the U.S. total 1,200 million grams per year. Over 85 percent of these emissions come from the following three source categories: The ASARCO copper smelter in Tacoma, Wash., emits about 282 million grams per year. Fourteen other copper smelters, using lower arsenic content ore, emit 738 million grams per year, and glass manufacturing plants are estimated to emit about 40 million grams annually. All three source categories are to be covered under today's proposal, which would remove approximately 200 million grams of arsenic a year.

While the agency estimates that the standards would reduce total arsenic emissions approximately 20 percent, it was noted that so-called fugitive emissions would be cut by about 65 percent. Fugitive arsenic emissions are those emissions not captured by control equipment to be vented through a stack. They are thought to be the emissions which pose the greatest risk to public health because they are released closer to ground level and have less chance of dispersing before reaching the public.

EPA had listed arsenic as a hazardous substance June 5, 1980, and had been ordered by a U.S. District Court in New York this January to publish a standard by July 11, 1983. Ruckelshaus said that while he could appreciate the concerns of the State of New York and the findings of the court, he nevertheless was disappointed that he did not have more time in which to consider other options to propose.

The standards proposed are open to debate and change. Other control options that are open to comment range from controls which might result in actual closure of the plants to different criteria for the setting of standards. Ruckelshaus stressed he is "eager to hear other suggested approaches to reducing arsenic emissions, including additional technical efforts industry can make."

ADMINISTRATIVE REMOVAL

ASA218

1983

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1962

Under Section 112 of the Clean Air Act, a pollutant is listed as hazardous if EPA finds that it may cause or contribute to, in the Act's words, "an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness."

The listing was based on EPA findings that there is a high probability that inorganic arsenic is carcinogenic (cancer causing) to humans and that there is significant public exposure to the pollutant. Epidemiological studies linking inorganic arsenic to human skin and lung cancer had led the National Cancer Institute, the National Academy of Sciences, and the International Agency for Research and Cancer to conclude that there is strong evidence that the pollutant is carcinogenic to humans. The 1980 listing also signified EPA's intention to establish emission standards for inorganic arsenic under Section 112.

To date, EPA has also listed under Section 112 asbestos, beryllium, mercury, vinyl chloride, benzene and radionuclides as hazardous. Standards have been set for asbestos, beryllium, mercury and vinyl chloride, and standards proposed for the others.

EPA already controls arsenic under its water pollution, drinking water, pesticide and hazardous waste programs. The U.S. Occupational Safety and Health Administration also has rules protecting workers from occupational exposures to this pollutant.

The Clean Air Act calls for standards to be set "at the level which (in the Administrator's) judgment provides an ample margin of safety to protect the public health." Since inorganic arsenic, like most carcinogens, is believed by most scientists to present risks at any level of exposure, any emission will present some human health risk. EPA's policy toward such no-threshold pollutants is that sources of the pollutants should be controlled at least to a level that reflects the best control technology available that is economically attainable. EPA is proposing standards today that require the best available technology for controlling arsenic emissions.

Ruckelshaus pointed out that the 81-day public comment period would place heavy emphasis on the citizens of Tacoma. "I feel we must involve them directly because the risk we are describing there is high. In essence, the citizens will have an opportunity to share with EPA their reactions to managing the risks involved. We must ask them if they are willing to accept certain risks associated with exposures to low levels of arsenic," Ruckelshaus said.

The Administrator said he felt such efforts in Tacoma must include "more than public hearings. We must also work to educate them as to the health risks involved and the options available to EPA."

The proposed standards will appear in this week's Federal Register. The public comment period will run through Sept. 30. Two sets of public hearings are scheduled. The first will be held Aug. 23, 24 and 25 in Washington, D.C. The second, to be held in Tacoma Aug. 30 and 31, will address only the proposed standards for the ASARCO smelter in that city.

For information concerning the proposed standards, contact Robert L. Ajax, Standards Development Branch (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711, telephone 919/541-5578. See attached fact sheet for more information.



Official Business
Penalty for Private Use \$300
An Equal Opportunity Employer



Environmental Information

August 1983

The date for the Tacoma public hearing on EPA's proposed air pollution emission standards for arsenic from the ASARCO smelter, originally scheduled for August 30, has been changed. The new date:

9 a.m.
Wednesday, November 2
(and, if necessary, the same time on November 3)
Rotunda Room
Tacoma Bicentennial Pavillion
1313 Market Street
Tacoma

Because of the change, there has been an extension in the deadline for written comments on the EPA proposal to Saturday, December 10. Comments should be sent (in duplicate if possible) to this address:

Central Docket Section
U.S. Environmental Protection Agency
401 M Street SW
Washington, D.C. 20460

Persons commenting on the proposed standard for the ASARCO smelter in Tacoma are asked to put this notation on the front of the envelope: A-80-40.

It would also be helpful if persons who wish to present oral testimony at the November hearing in Tacoma would notify EPA of their intention by October 26. Please write Laurie Kral, Air Programs Branch (Mail Stop 532), U.S. Environmental Protection Agency, 1200 Sixth Avenue, Seattle 98101, or call her at 442-1089.

EPA has prepared three fact sheets which summarize EPA's proposal and the estimated health risks associated with the Tacoma smelter's arsenic emissions. These fact sheets are available at the following locations:

- Swasey, Mottet, Fern Hill, South Tacoma, Moore, McCormick, Kobetich, Municipal Reference and Main Branches of Tacoma Public Library
- Library, University of Puget Sound
- Lakewood and Peninsula Branches of the Pierce County Library
- Vashon Island Branch, King County Library
- Washington State Library, Olympia
- EPA Office of Public Affairs, 12th Floor, 1200 Sixth Avenue, Seattle

Anyone who needs more information than provided by the fact sheets is encouraged to review the documents from which they were derived. To make arrangements to see these documents, please write Dee Ann Kirkpatrick, Office of Public Affairs (Mail Stop 634), U.S. Environmental Protection Agency, 1200 Sixth Avenue, Seattle 98101, or call her at 442-1200

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1983

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1964

TACOMA PUBLIC MEETING, August 16, 1983
Questions raised by Group 2
Recorder: Lori Cohen

1. How does EPA define "ample margin of safety" in areas other than air pollution? This seems to be a major question in deciding the ASARCO case
2. How many deaths per 1000 constitutes an "ample margin of safety"?
3. What is a microgram? (Please give example of how big.)
4. If secondary hoods are BAT--why hasn't EPA required ASARCO to install them? Wouldn't this be best for the people in the surrounding area?
5. Many carcinogens are in the environment. Do carcinogens have cumulative effects on a person who is exposed to more than one at a time?
6. One of the slides showed that the expected number of cancer cases differed greatly from actual cases-- "linear relationship" that EPA suggested is not clear.
7. Relative risks (observed to actual) seemed to stay the same. (Answer: EPA used absolute risk model.)
8. What are symptoms of exposure to arsenic from breathing?
9. What happens to the emissions from the 500 ft. stack? EPA says they don't affect community--where do they go? Is EPA looking at ways to reduce stack emissions?
10. What is the life expectancy of the pollutants from the smelter? Do they dissipate, accumulate, breakdown, etc? (Reference to "Crisis to Crisis" which suggested pollutants travel long distances.) Note: this question was not answered.
11. Charts show high lung cancer levels within 12 miles of smelter--why isn't this actually seen in the population? If high levels of carcinogens were in the area, you would see higher rates of cancer in Tacoma area. In fact, Tacoma cancer rates are lower than for Washington State. Are fine differences in projected cancer rates high enough to close the plant?
12. Is exposure taken into account in modelling? Seems like Vashon residents are more exposed than those in Tacoma. (EPA needs to clarify 20 km. exposure area.)
13. Since Administrator decides what is an unreasonable risk--why ask the public?
14. How will Administrator use public input in decision-making process? How will public comments be weighted -- heavier for those closer to smelter?
15. No answer to no. 14 -- will this question be answered before decision is made? Will process be made public?

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1965

16. EPA focus on cancer--what about other diseases caused by smelter operations that have been underway for about 100 years? [Comment: There are people here who think smelter is a nuisance.]
17. Is there research on BAT on-going at EPA? National/worldwide?
18. How can we reach Bob Ajax for further questions?
19. Speaker lives 1/2 mile from smelter--experiences visible fallout/particles near home. What is fallout composition? (Doesn't believe Ajax in that tall stack emissions do not affect local population--speaker can see fallout from the stack.) If particles not arsenic--what are they and what affects does it have? If arsenic not falling near plant--why are soil levels high?
20. Is EPA conducting a more comprehensive survey of public comment to get public opinion-- like some of the local the newspapers? Not everyone can comment here.
21. What kind of measuring devices are going to be used to gather more data near the plant? One-time monitors, continuous monitors, etc?
22. What is connection between EPA, surgeon general and other agencies regulating other carcinogens? Why isn't more action being taken against all of these carcinogens?
23. ASARCO process--what is happening in the arsenic plant itself in terms of emissions control? (Emission rates seem high.)
24. Is EPA examining the tremendous amount of "flue dust" that has fallen out over the years and been deposited in the soil? Flue dust must contain many different components/ore from all over the world--what is being done to examine/control this?
25. Will ASARCO pay for additional studies needed under Superfund?
26. If ASARCO shuts down--will they still have to cover remedial action costs?
27. If EPA limited the arsenic content of various ores--what affect would this have on the cost of ASARCO operations?
28. Smelter has controls--is risk greater from current emissions or from what has already been accumulated in soil?
29. EPA says arsenic causes genetic mutations--speaker claims that own research has shown that arsenic does not cause genetic change that can be passed on to generations. EPA should clarify this point.
30. What about arsenic leaching into the bay?
31. What about sulfur dioxide emissions--not only from ASARCO--is it safe to eat vegetables from the garden, local salmon, etc? How bad is arsenic contamination in local food sources?
32. Concern over plume pattern of smelter--seems like new populations settling in this area--are they threatened by the smelter's emissions?

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1966

33. Slide re: worker exposure--how do EPA risk models reflect controls that workers use to reduce their exposure (e.g., respirators, or reduced hours in an exposed area)? How is occupational health data used in EPA's risk models?

34. Is EPA allowed to take a census of exposed population to find out what health problems are caused by the smelter?

35. When is ASARCO required to install control equipment once decision is made?

36. "Smelter has long history of dragging its feet in installing equipment." What authority does EPA have to force installation of controls? What is the penalty?

37. How is Superfund clean-up being coordinated with arsenic decision?

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1967

TACOMA PUBLIC MEETING, August 16, 1983
Questions raised by Group 2
Recorder: Lori Cohen

1. How does EPA define "ample margin of safety" in areas other than air pollution? This seems to be a major question in deciding the ASARCO case
2. How many deaths per 1000 constitutes an "ample margin of safety"?
3. What is a microgram? (Please give example of how big.)
4. If secondary hoods are BAT--why hasn't EPA required ASARCO to install them? Wouldn't this be best for the people in the surrounding area?
5. Many carcinogens are in the environment. Do carcinogens have cumulative effects on a person who is exposed to more than one at a time?
6. One of the slides showed that the expected number of cancer cases differed greatly from actual cases-- "linear relationship" that EPA suggested is not clear.
7. Relative risks (observed to actual) seemed to stay the same. (Answer: EPA used absolute risk model.)
8. What are symptoms of exposure to arsenic from breathing?
9. What happens to the emissions from the 500 ft. stack? EPA says they don't affect community--where do they go? Is EPA looking at ways to reduce stack emissions?
10. What is the life expectancy of the pollutants from the smelter? Do they dissipate, accumulate, breakdown, etc? (Reference to "Crisis to Crisis" which suggested pollutants travel long distances.) Note: this question was not answered.
11. Charts show high lung cancer levels within 12 miles of smelter--why isn't this actually seen in the population? If high levels of carcinogens were in the area, you would see higher rates of cancer in Tacoma area. In fact, Tacoma cancer rates are lower than for Washington State. Are fine differences in projected cancer rates high enough to close the plant?
12. Is exposure taken into account in modelling? Seems like Yashon residents are more exposed than those in Tacoma. (EPA needs to clarify 20 km. exposure area.)
13. Since Administrator decides what is an unreasonable risk--why ask the public?
14. How will Administrator use public input in decision-making process? How will public comments be weighted -- heavier for those closer to smelter?
15. No answer to no. 14 -- will this question be answered before decision is made? Will process be made public?

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1966

16. EPA focus on cancer--what about other diseases caused by smelter operations that have been underway for about 100 years? [Comment: There are people here who think smelter is a nuisance.]

17. Is there research on BAT on-going at EPA? National/worldwide?

18. How can we reach Bob Ajax for further questions?

19. Speaker lives 1/2 mile from smelter--experiences visible fallout/particles near home. What is fallout composition? (Doesn't believe Ajax in that tall stack emissions do not affect local population--speaker can see fallout from the stack.) If particles not arsenic--what are they and what affects does it have? If arsenic not falling near plant--why are soil levels high?

20. Is EPA conducting a more comprehensive survey of public comment to get public opinion-- like some of the local the newspapers? Not everyone can comment here.

21. What kind of measuring devices are going to be used to gather more data near the plant? One-time monitors, continuous monitors, etc?

22. What is connection between EPA, surgeon general and other agencies regulating other carcinogens? Why isn't more action being taken against all of these carcinogens?

23. ASARCO process--what is happening in the arsenic plant itself in terms of emissions control? (Emission rates seem high.)

24. Is EPA examining the tremendous amount of "flue dust" that has fallen out over the years and been deposited in the soil? Flue dust must contain many different components/ore from all over the world--what is being done to examine/control this?

25. Will ASARCO pay for additional studies needed under Superfund?

26. If ASARCO shuts down--will they still have to cover remedial action costs?

27. If EPA limited the arsenic content of various ores--what affect would this have on the cost of ASARCO operations?

28. Smelter has controls--is risk greater from current emissions or from what has already been accumulated in soil?

29. EPA says arsenic causes genetic mutations--speaker claims that own research has shown that arsenic does not cause genetic change that can be passed on to generations. EPA should clarify this point.

30. What about arsenic leaching into the bay?

31. What about sulfur dioxide emissions--not only from ASARCO--is it safe to eat vegetables from the garden, local salmon, etc? How bad is arsenic contamination in local food sources?

32. Concern over plume pattern of smelter--seems like new populations settling in this area--are they threatened by the smelter's emissions?

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1967

33. Slide re: worker exposure--how do EPA risk models reflect controls that workers use to reduce their exposure (e.g., respirators, or reduced hours in an exposed area)? How is occupational health data used in EPA's risk models?

34. Is EPA allowed to take a census of exposed population to find out what health problems are caused by the smelter?

35. When is ASARCO required to install control equipment once decision is made?

36. "Smelter has long history of dragging its feet in installing equipment." What authority does EPA have to force installation of controls? What is the penalty?

37. How is Superfund clean-up being coordinated with arsenic decision?

THE FACTS ABOUT EPA'S PROPOSED ARSENIC STANDARDS, ASARCO, AND YOU

WHY IS EPA HOLDING HEARINGS IN TACOMA?

The Environmental Protection Agency has issued stringent standards for the control of arsenic emissions at Asarco's Tacoma plant. These standards require that Asarco install the best, most effective equipment available—anywhere at any price—to capture any arsenic that isn't already collected by the smelter's existing hoods, scrubbers and other emission controls. Asarco has agreed to do that and in fact had already begun installing some of the equipment before EPA formally required it. **Asarco has absolutely no objections to the proposed standards for arsenic emission.**

EPA wants to collect public reaction to these standards before Administrator William Ruckelshaus takes formal action on them. That's why public hearings have been set for August 30-31 in Tacoma.

WHY AREN'T THE PROPOSED STANDARDS STRICTER?

They can't be. The proposed standards call for every method of emission control that has been developed—it's a concept known as Best Available Technology, or B.A.T.

THEN WHAT'S THE FUSS ABOUT?

While Asarco approves of the proposed standards it objects to the health assessment estimates and calculations they are based on.

When it issued its proposed standards, EPA also released the results of a "Risk Assessment," which received widespread attention in the news media. The assessment was based on computer modeling which, unfortunately, relied on grossly inaccurate data.

The figures used for the computer model were from 410% to 2267% higher than the actual figures. Acknowledging the inaccuracy of the data used for the computer model, EPA has decided to rerun the model using more accurate figures. Unfortunately, that isn't expected to be completed until October 15.

WHAT ABOUT THE QUESTION OF PUBLIC HEALTH?

- There is no known data that attributes lung cancer deaths to arsenic for residents of the region.
- Tacoma ranks below the national average and only fifth among the state's 10 largest cities for lung cancer.
- Since 1972, Asarco has spent more than \$45 million to reduce pollution. Arsenic emissions have been cut by 85-90%, and the secondary hoods that the new standards would require (which already are being installed) will bring the total reduction in arsenic emissions escaping the converter operation to 94%.
- EPA admits that "there is no solid scientific basis" for the kind of modeling on which it based its health risk assumption.

WHY SHOULD THE ASARCO PLANT MAKE ARSENIC ANYWAY?

Asarco's Tacoma plant is this nation's ONLY domestic source for arsenic trioxide and metallic arsenic which are used in the lumber industry, the electronics industry, in agriculture and glass making, in the manufacture of semiconductor chips, in batteries, and even as a feed additive for poultry and livestock. Without the Tacoma smelter, the United States would have to rely on foreign countries for this important chemical. Moreover, EPA has stated that if Asarco/Tacoma stopped making arsenic, there isn't sufficient production capability in the rest of the world to supply the difference.

WHAT CAN I DO?

- You can attend the public hearings which will be held in Tacoma November 2, and you can speak out in support of the proposed standard.
- You can send written comments to the Central Docket Section, (LE-131), U.S. Environmental Protection Agency, 401 M Street SW, Washington, D.C. 20460, ATTN: A-80-40.
- You can encourage your friends and relatives to do the same.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1972

Official Business
Penalty for Private Use \$300
An Equal Opportunity Employer

United States
Environmental Protection Agency
Region X (M/S 605)
1200 Sixth Avenue
Seattle, WA 98101



Postage and Fees Paid
U.S. Environmental Protection Agency
EPA - 305



News Release



83-51

Contact: Bob Jacobson
(206) 442-1203

July 12, 1983

FOR RELEASE AFTER 1 P.M. (PDT), TUESDAY, JULY 12

Today's proposal by the U.S. Environmental Protection Agency to curtail emissions of inorganic arsenic at the ASARCO smelter in Tacoma triggers a comment period during which the public will have an important role in determining exactly what level of pollution controls will provide "an ample margin of safety to protect public health," according to Ernesta B. Barnes, EPA's Northwest regional administrator.

"That phrase -- 'an ample margin of safety' -- is the critical issue in the upcoming public comment period on the EPA proposal," Barnes said. "In making the proposal, EPA is openly acknowledging that our proposed controls for ASARCO will not eliminate risks to health, but will only reduce them.

"The question facing citizens affected by the ASARCO arsenic emissions is whether the reduced health risk is acceptable."

Inorganic arsenic is a probable carcinogen, said Barnes, and therefore can be assumed to present risks at any level of exposure. There is no defined threshold at which risks begin to occur. EPA's policy toward such non-threshold pollutants is that -- as a minimum requirement -- their emissions be reduced by the best control technology available.

(more)

-2-

Barnes also said that EPA will go beyond that minimum criterion of "best available control technology" if necessary to prevent an unreasonable risk to public health.

"During the upcoming public comment period, EPA is encouraging people within the 12.5 mile radius of the smelter to help decide what is an 'acceptable' or 'reasonable' health risk," Barnes said. "In addition, EPA will be soliciting the comments of knowledgeable parties -- ASARCO officials and employees, the engineering community, State and local air pollution control agencies -- who are in the best position to tell EPA whether our proposal does, indeed, represent the best available control technology."

The EPA proposal calls for ASARCO to place hoods on the converters used in the smelting process, a move that would cost ASARCO an estimated \$3.5 million in installation costs and an estimated annual operating cost of \$1.5 million. Use of the hoods is expected to reduce ASARCO's annual emissions of inorganic arsenic from 310 tons to 189 tons.

"Does that requirement constitute the very best control technology available to ASARCO? -- that's what we want to learn during the comment period," Barnes said. "Are there other operations or practices at the smelter where further controls can be employed to reduce emissions of inorganic arsenic?"

Barnes added that ASARCO's ongoing emissions of inorganic arsenic may be only part of the public health risks faced by people living downwind from the smelter.

"Public health officials are concerned by the deposits of arsenic over the years," Barnes said. "Even with future decreases in the amount of arsenic from ASARCO, arsenic concentrations in the soil surrounding the smelter will remain high."

Barnes said the public hearing on EPA's proposal will be held from noon to 10 p.m. on Tuesday, August 30, in the Rotunda Room of the Tacoma Bicentennial Pavillion at 1313 Market Street.. A second day of hearings will be held, if necessary, at the same location on the following day.

Between now and then, Barnes said EPA will conduct public workshops, probably in early August, to acquaint people in Tacoma and nearby Vashon and Maury Islands with details of the EPA proposal and to help them prepare testimony for the hearing. Times and places for the workshop will be announced as soon as arrangements are made.

More information about the hearings and the workshops may be obtained from Laurie Kral, Air Programs Branch (Mail Stop 532) EPA, 1200 Sixth Avenue, Seattle 98101, or by calling her at (206) 442-1089.

#

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1974

SCIENCE, RISK AND PUBLIC POLICY

...EPA is an instrument of public policy, whose mission is to protect the public health and environment in the manner laid down by its statutes. That manner is to set standards and enforce them; and our enforcement powers are strong and pervasive. But the standards we set, whether technology or health-related, must have a sound scientific base.

Science and the law are thus partners at EPA, but uneasy partners. It's a shotgun wedding. The main reason for the uneasiness lies, I think, in the conflict between the way science really works and the public's thirst for certitude that is written into EPA's laws.

...But EPA's laws often assume, indeed demand, a certainty of protection greater than science can provide at the current state of knowledge. The laws do no more than reflect what the public believes and what it often hears from people with scientific credentials on the 6 o'clock news. The public thinks we know what all the bad pollutants are, precisely what adverse health or environmental effects they cause, how to measure them exactly and control them absolutely. Of course, the public and sometimes the law are wrong, but not all wrong. We do know a lot about some pollutants and we have controlled them effectively using the tools of the Clean Air Act and the Clean Water Act. These are the pollutants for which the scientific community can set safe levels and margins of safety for sensitive populations. If this were the case for all pollutants, we could breathe more easily (in both senses of the phrase); but it is not so.

...It will not be easy, because we must now deal with a class of pollutants for which a safe level is difficult, if not impossible, to establish. These pollutants interfere with genetic processes and are associated with the diseases we fear most: cancer and reproductive disorders, including birth defects. The scientific consensus has it that any exposure, however small, to a genetically active substance embodies some risk of an effect. Since these substances are wide-spread in the environment, and since we can detect them down to very low levels, we must assume that life now takes place in a minefield of risks from hundreds, perhaps thousands, of substances. No more can we tell the public: you are home free with an adequate margin of safety.

This worries all of us, and it should. But when we examine the premises on which such estimates of risk are based, we find a confusing picture. In assessing a suspected carcinogen, for example, there are uncertainties at every point where an assumption must be made: in calculating exposure; in extrapolating from high doses where we have seen an effect to the low doses typical of environmental pollution; in what we may expect when humans are subjected to much lower doses of the same substance that caused tumors when given in high doses to laboratory animals; and finally, in the very mechanisms by which we suppose the disease to work.

Excerpts from a speech by William D. Ruckelshaus, Administrator, Environmental Protection Agency, to the National Academy of Sciences on June 22, 1983.

One thing we clearly need to do is insure that our laws reflect these scientific realities. The Administrator of EPA should not be forced to represent that a margin of safety exists for a specific substance at a specific level of exposure where none can be scientifically established. This is particularly true where the inability to so represent forces the cessation of all use of a substance without any further evaluation.

...My purpose is to speak of risk assessment and risk management and science's role in both. It is important to distinguish these two essential functions, and I rely here on a recent National Academy of Sciences report on the management of risk in the Federal government. Scientists assess a risk to find out what the problems are. The process of deciding what to do about the problems is risk management. The second procedure involves a much broader array of disciplines, and is aimed toward a decision about control.

Risk management assumes we have assessed the health risks of a suspect chemical. We must then factor in its benefits, the costs of the various methods available for its control, and the statutory framework for decision. The NAS report recommends that these two functions be separated as much as possible within a regulatory agency. This is what we now do at EPA and it makes sense.

I think we also need to strengthen our risk assessment capabilities. We need more research on the health effects of the substances we regulate. I intend to do everything in my power to make clear the importance of this scientific analysis at EPA. Given the necessity of acting in the face of enormous scientific uncertainties, it is more important than ever that our scientific analysis be rigorous and the quality of our data be high. We must take great pains not to mislead people regarding the risks to their health. We can help avoid confusion both by the quality of our science and the clarity of our language in explaining the hazards.

...I am sure that in the future, this being an imperfect world, the rigor and thoroughness of our risk analyses will be affected by many factors, including the toxicity of the substance, the populations exposed, the pressure of the regulatory timetable, and the resources available.

Despite these often conflicting pressures, risk assessment at EPA must be based on scientific evidence and scientific consensus only. Nothing will erode public confidence faster than the suspicion that policy considerations have been allowed to influence the assessment of risk.

Although there is an objective way to assess risk, there is, of course, no purely objective way to manage it, nor can we ignore the subjective perception of risk in the ultimate management of a particular substance. To do so would be to place too much credence in our objective data and ignore the possibility that occasionally one's stomach is right. No amount of data is a substitute for judgment.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

Further, we must search for ways of describing risk in ways the average citizen can comprehend. Telling a family living close to a manufacturing facility that no further controls are needed on the plants's emissions because, according to our linear model their risk is only 10^{-6} , is not very reassuring. We need to describe the suspect substances as clearly as possible, tell people what the known or suspected health problems are and help them compare that risk to those with which they are more familiar.

To effectively manage the risk, we must seek new ways to involve the public in the decision-making process. Whether we believe in participatory democracy or not it is a part of our social regulatory fabric. Rather than praise or lament it, we should seek more imaginative ways to involve the various publics impacted by the substance at issue. They need to be involved early on and they need to be informed if their participation is to be meaningful. We will be searching for ways to make our participatory process work better.

For this to happen, scientists must be willing to take a larger role in explaining the risks to the public--including the uncertainties inherent in any risk assessment. Shouldering this burden is the responsibility of all scientists, not just those with a particular policy end in mind. In fact all scientists should make clear when they are speaking as scientists--*ex cathedra*--and when they are recommending policy they believe should flow from scientific information. What we need to hear more of from scientists is science...Our country needs the clear unbiased voice of science.

...Lest anyone misunderstand, I am not suggesting that all the elements of managing risk can be reduced to some neat mathematical formula. Going through a disciplined approach can help. It will assist in organizing our thoughts to include all the elements that should be weighed. We will build up a set of precedents that will assist later decision-making and provide more predictable outcomes for any social regulatory programs we adopt.

It is clear to me that in a society in which democratic principles so dominate, the perceptions of the public must be weighed. Instead of objective and subjective risks, the experts sometimes substitute "real" and "imaginary" risks. There is a certain arrogance in this -- an elitism which has ill served us in the past. Rather than decry the ignorance of the public and seek to ignore their concerns, our governmental processes must accommodate the will of the people and recognize its occasional wisdom. As Thomas Jefferson observed:

"If we think (the people) not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion."

1976

A FACT SHEET ARSENIC CONTROLS

WHY THE SPECIAL ATTENTION FOR ASARCO'S TACOMA SMELTER?

The ASARCO smelter in Tacoma uses copper ore concentrate with a much higher arsenic content than any other U.S. copper smelter. Arsenic makes up about four percent of the ore at Tacoma; no other copper smelter uses ore concentrate with more than 0.6 percent.

Arsenic is a commercially valuable by-product of the Tacoma operation. The smelter is the only U.S. manufacturer of arsenic and arsenic trioxide; it produces one-third of all arsenic used in the country.

WHAT IS EPA PROPOSING FOR THE TACOMA SMELTER?

There are three principal phases in the smelting process that transforms raw ore into blister copper. (1) The ore is first run through a roaster as an initial step in gradually removing impurities. (2) What emerges from the roaster is run through a reverberatory furnace. (3) The molten mixture from the furnace is then sent to converters. EPA seeks to reduce the emissions of arsenic that escape capture in the third step, e.g., the converting process.

EPA is proposing that additional hoods be placed on the converters so that ASARCO would capture and collect "fugitive" arsenic given off during this third stage in removing impurities from the copper.

The EPA proposal would include a standard expressed in terms of equipment specifications for the collection device. The criterion used by EPA in designing this standard is what is called the "Best Available Technology", or BAT. BAT means the best controls available considering economic, energy, and environmental impacts. BAT is the minimum level of control which EPA would require for hazardous air pollutants such as arsenic.

IS THE PROPOSED "BEST AVAILABLE TECHNOLOGY" INDEED THE BEST ASARCO CAN DO?

One of the chief issues during the public hearing/public comment process is whether EPA's proposed standard does, in fact, represent the very best control technology available to ASARCO. Are there other operations or practices at the smelter where additional control can be employed to reduce emissions of arsenic?

There have been discussions among air pollution control engineers involved in the ASARCO-arsenic issue that other measures may exist which can be applied to produce even greater reductions in ASARCO's arsenic emissions. One example which has been suggested has been baghouse controls on the reverberatory furnaces which may play a major role in reducing the amount of arsenic which now escapes.

Other suggestions have been made that ASARCO may be able to reduce fugitive emissions throughout the smelter and that consideration be given to require ASARCO to use ore concentrate with a lower arsenic content. The feasibility of such requirements and the quantification of emission reduction and cost is the subject of an ongoing EPA task force effort. Comments from the public are encouraged and welcomed.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1978

WHAT WOULD EPA'S PROPOSED CONTROLS COST ASARCO?

EPA has estimated that it would cost ASARCO \$3.5 million to install the hooding equipment required by the proposed controls, and that the annual cost to operate the equipment would be \$1.5 million. Operation of the equipment is expected to increase the smelter's annual energy consumption by one-half of one percent over the 2.9 billion kilowatt hours of electricity the smelter now uses each year. EPA has estimated that its proposed controls could result in an increase in the price of copper by approximately 0.8 percent if the company chose to maintain its normal profit margin. The cost may be higher if additional or alternative controls are found to be necessary.

IS SHUTDOWN OF THE SMELTER A POSSIBILITY?

Yes, it is a possibility.

Regulation of hazardous air pollutants such as arsenic is required by Section 112 of the Clean Air Act. The only absolutely safe approach to setting standards for substances which cause cancer would be to set a standard that would reduce the emissions to zero. In setting standards previously for two other cancer-causing air pollutants, asbestos and vinyl chlorides, EPA promulgated standards that did not require shutdown of facilities that released those pollutants to the ambient air.

EPA can impose standards that go beyond Best Available Technology if, in the language of the statute, it is necessary "to protect the public health....with an ample margin of safety."

A FACT SHEET

SUPERFUND AND ASARCO

WHAT IS SUPERFUND?

Superfund is the Federal program that allows EPA -- with the participation of State governments -- to respond directly to releases (or threatened releases) of hazardous substances and pollutants or contaminants that may endanger public health or welfare. The program was set up by the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The law is referred to as "CERCLA", or, more popularly, as the Superfund law because it created a \$1.6 billion fund to deal with problems resulting from hazardous materials in the environment.

HOW DOES SUPERFUND COME INTO PLAY?

In April 1983, the Washington Department of Ecology (DOE) signed an agreement with EPA that called for DOE to lead a \$1.4 million EPA-funded investigation of contamination by hazardous chemicals in an area described as the Commencement Bay Nearshore/Tideflats area. The area includes Ruston, site of the ASARCO smelter. A sum of \$100,000 will be devoted to investigate contamination in Ruston, Maury Island and Vashon Island. Soils in those vicinities are known to contain arsenic and cadmium in amounts that have prompted the Tacoma-Pierce County Health Department and the Seattle-King County Health Department to issue warnings about the consumption of garden vegetables grown in contaminated soils.

WHAT IS THE OBJECT OF THE SUPERFUND INVESTIGATION?

The investigation, to be managed by DOE and the Tacoma-Pierce County Health Department, will attempt to establish the pathways by which arsenic finds its way into the urine of school children. There are a number of suspected pathways: household dust, windblown dust from unpaved lots and roads, vegetable intake, playground soil and smelter emissions. DOE and the health department will attempt to determine the most significant pathways. According to the current schedule, the investigation should be completed by November 1984. Once the pathways are established, EPA has the authority to order the source of the contamination, if known, to take corrective action that will eliminate the risk to health. If a source of the contamination refused to undertake the clean-up, EPA has the legal authority to do the job itself with the understanding that all costs incurred must be repaid to EPA by the source.

WHAT IS SUPERFUND'S RELATIONSHIP TO THE PENDING EPA PROPOSAL?

The pending EPA proposal to place new restrictions on arsenic emissions from ASARCO is separate from the Superfund program, although the two have similar goals. The proposal has as its objective the reduction of arsenic from current and future smelter emissions. The Superfund program is directed toward reducing the health and environmental risks posed by the historic build-up of arsenic in the soil.

Until the joint DOE-health department Superfund investigations are completed, what should or can be done to remedy the historic deposit of arsenic in the soils will not be known. Any cleanup action, however, will be planned with the help of the public. An advisory group is being formed, and will begin meeting soon. For more information about the public's involvement with Superfund activities, contact Derek Sandison of the Tacoma-Pierce County Health Department at (206) 593-4750.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1980

A FACT SHEET

THE RISK TO PUBLIC HEALTH

Arsenic, in its inorganic form, has long been known as an acute poison to humans when ingested in relatively large amounts. However, more recent data have shown that exposure to lower levels of arsenic results in skin and lung cancer in humans. For cancer-causing substances, such as inorganic arsenic, scientists are unable to identify a safe level of exposure. Therefore, EPA and other federal agencies have taken the position that cancer may occur at any level of exposure to arsenic no matter how low, with the risk of cancer increasing as exposure increases.

For the purpose of developing its arsenic regulation, EPA has determined that the ASARCO smelter should be controlled at a minimum to the level that reflects best available technology (BAT) and to a more stringent level if necessary to prevent health risks that are unreasonable. This approach requires that EPA estimate the cancer risk remaining for the population after these controls are in place and then determine if the remaining cancer risk is acceptable, taking into account the costs and technical feasibility of reducing the risk further.

To calculate this remaining risk, EPA combined data from two different types of analyses. The first analysis provides what is known as the unit risk number. This number is defined as the lifetime lung cancer risk that would occur in a population which is exposed throughout their lifetime to one microgram per cubic meter of arsenic in the air they breathe. (A microgram is equal to about 1/28 millionth of an ounce and a cubic meter is about the same as a cubic yard. Therefore, one microgram per cubic meter is about 1/28 millionth of an ounce of arsenic in a cubic yard of air.) This unit risk number is calculated by using data from studies of workers who were exposed to arsenic in smelters and at a pesticide manufacturing plant.

The second analysis estimates the exposure for residents living near the smelter. This is done with mathematical models. Utilizing data on emissions of arsenic from the ASARCO smelter as well as information on weather and geographic conditions, a dispersion model is used to calculate the concentration of arsenic expected at over one hundred locations within approximately 12 miles of the smelter. Combining these exposure estimates with population data from the Bureau of Census gives an estimate of the number of people exposed to various concentrations of arsenic within about 12 miles of the smelter. This 12 mile distance was chosen because the mathematical models used tend not to be as accurate at a greater distance. (While our analysis stops at about 12 miles, it must be realized that risk from exposure to arsenic emissions extends beyond this distance, though at a reduced level.)

By multiplying the unit risk number and the estimated exposure for people living around the smelter, it is possible to make an estimate of the cancer risks expected in the ASARCO community as a result of arsenic exposure. For those people living within one mile of the smelter, the lifetime cancer risk remaining after controls have been installed would be about 0.2%. This is in addition to the normal lifetime cancer risk of about 20% that would be expected without arsenic exposure. Within the 12 mile area this excess life-time cancer risk, after controls are installed, would be 0.004%. Another way of expressing this risk is by using lung cancer incidence numbers. Lung cancer incidence is the expected number of lung cancer cases that would result each year from arsenic exposure within 12 miles of the smelter. Without additional controls, the estimated lung cancer cases are approximately 4 per year. After the proposed controls were installed, the estimated number would drop to approximately one per year. To keep this in perspective, these numbers should be compared to the several hundred lung cancer deaths that are normally expected each year in a population the size of that found within this 12 mile radius.

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1981

UNCERTAINTIES IN RISK CALCULATIONS

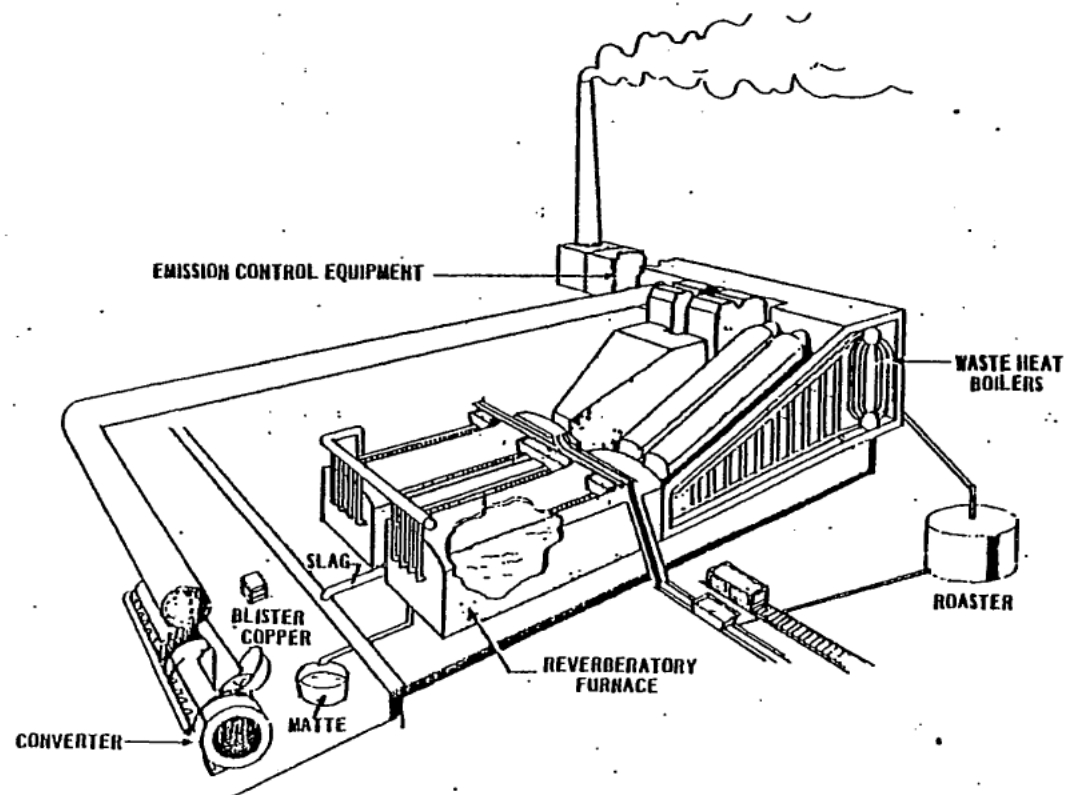
The process of calculating these risks for the population around the smelter involves many assumptions and uncertainties. So while these estimates of risk are a useful tool in the decision-making process, MUCH CAUTION SHOULD BE EXERCISED TO AVOID RELYING TOO HEAVILY ON THE NUMBERS PRESENTED ABOVE. These numbers have considerable uncertainty for the following reasons:

1) MODELING ASSUMPTIONS - Measurement of air concentration of arsenic around the ASARCO plant have not been done thoroughly; however, the measurements that have been obtained indicate lower concentrations than those predicted by the dispersion model. Arsenic emissions data from the smelter used in the dispersion model are not precise. In many cases these emission rates were based on assumptions rather than actual emission tests. This is especially true for fugitive emissions which are very important in calculating concentration yet are very difficult to measure. Also, estimates of how these arsenic emissions mix with the ambient air are hard to determine because of the complex geography and lack of specific weather data for the area around the smelter. These problems may explain why the ambient monitoring around the smelter shows lower concentrations of arsenic than EPA's dispersion model predicts.

2) EXPOSURE ASSUMPTIONS - A principal assumption is that all persons living within the 12 mile radius of the smelter will remain in the same location for a 70 year lifetime and are exposed to a constant, average concentration of airborne arsenic. This assumption could result in large overestimates of arsenic exposure for those who spend a lot of time away from their residences and in underestimates for workers employed at the smelter. Additionally, exposure to arsenic from resuspension of arsenic bearing dusts from city streets, empty lots, and playgrounds has not been taken into consideration.

3) UNIT RISK NUMBER - Because arsenic is a carcinogen, it was assumed that a linear relationship exists between exposure and risk. Simply stated, this means that a person who inhales one microgram of arsenic per cubic meter of air is one-tenth as likely to get cancer as a person who inhales ten micrograms per cubic meter. If the relationship between exposure and risk is not linear, a different unit risk number could result which would in turn change the lung cancer risk estimates made for the population around the smelter. It is unlikely that the actual cancer risks would be higher than those predicted by EPA, but they could be substantially lower.

EPA is now in the process of reviewing the data used in calculating risk estimates, especially those data which relate to arsenic emissions and dispersion modeling. If necessary, new data will be developed in these areas to permit EPA to better estimate risks to the smelter community.



525-96-01

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

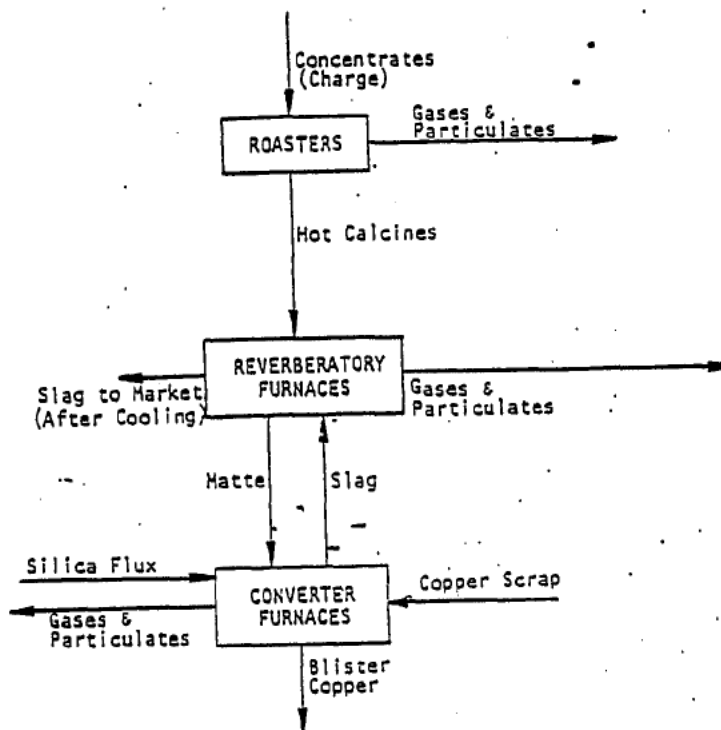
2861

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1983



BASIC SMELTING PROCESS USED AT THE TACOMA SMELTER

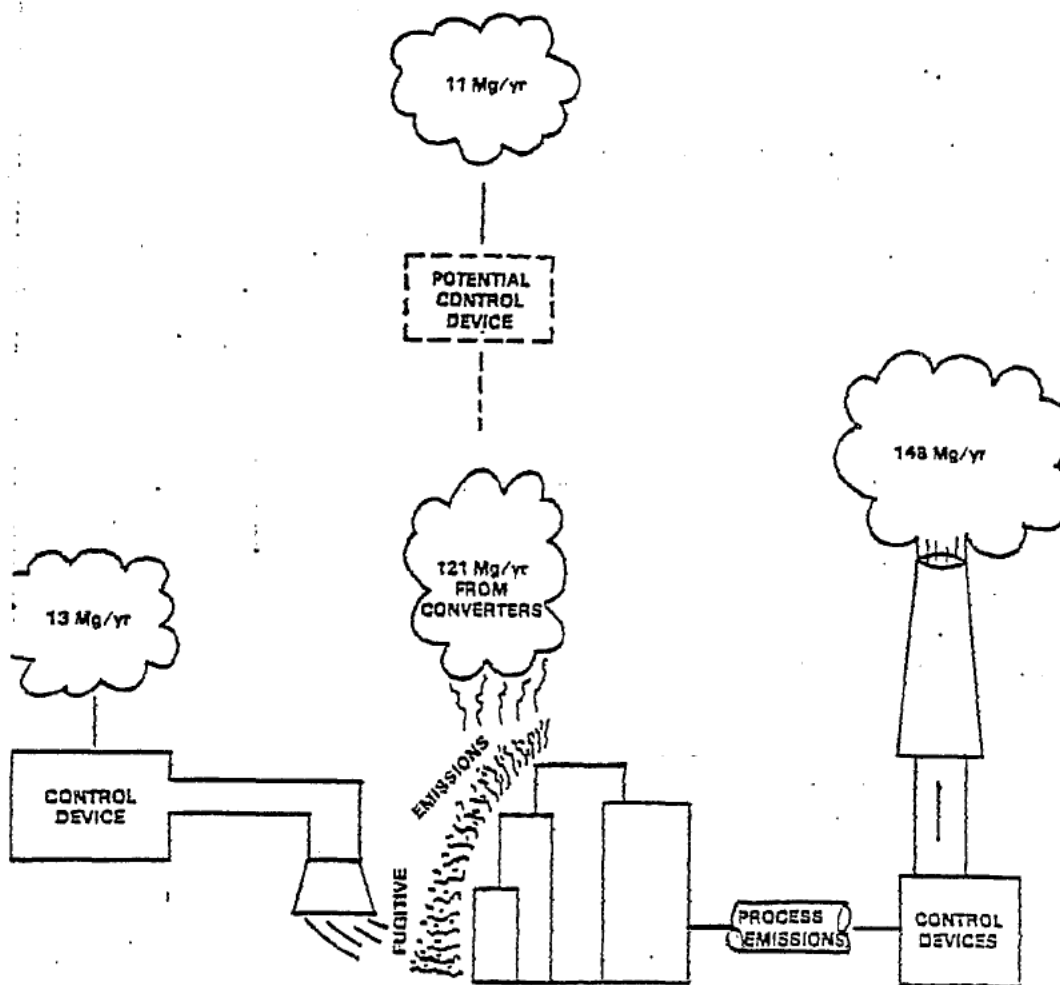
Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1984

EMISSIONS FROM ASARCO/TACOMA

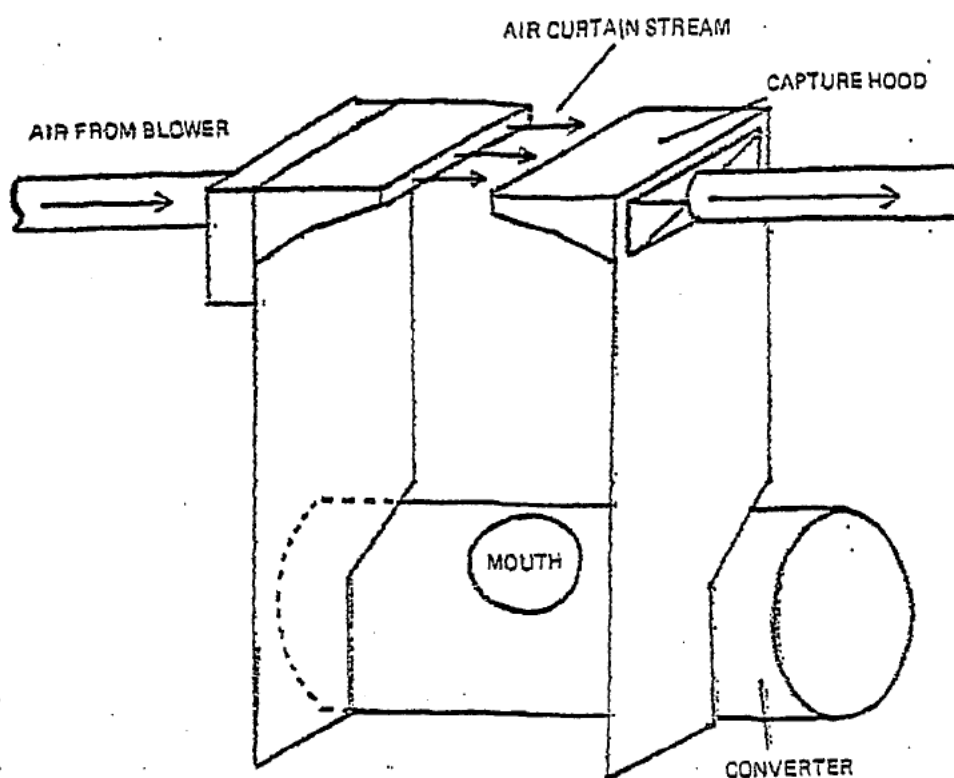


Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

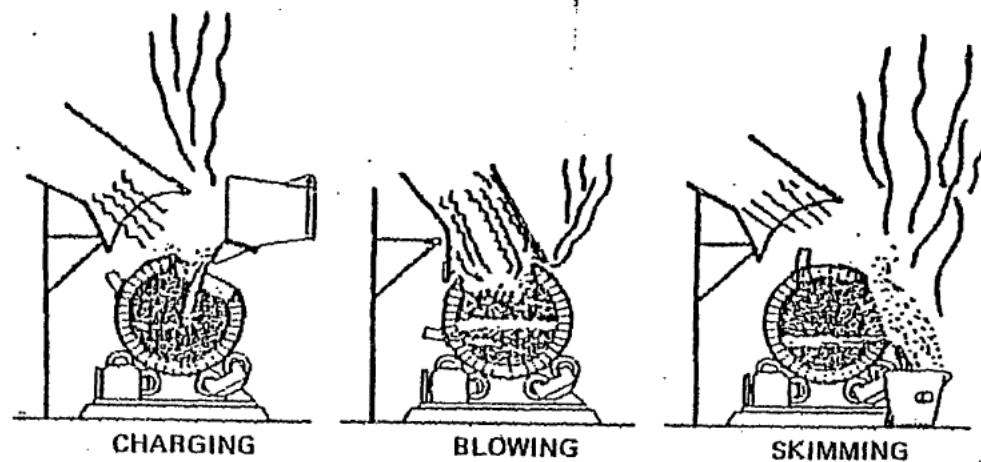
ADMINISTRATIVE REMOVAL

ASA218

1985



CONVERTER FIXED ENCLOSURE/AIR CURTAIN (OPEN)



COPPER CONVERTER OPERATIONS

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

1986

ADMINISTRATIVE REMOVAL

ASA218

1987

DATE AUGUST 16, 1983

LOCATION TACOMA, WA

[illegible]

PLEASE
PRINT

PLEASE
PRINT

PLEASE
PRINT

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

	NAME	ADDRESS	REPRESENTING
	(b) (6)	(b) (6)	—
PLEASE PRINT	(b) (6)	(b) (6)	—
	JOHN D KELTHER	(b) (6)	State's (b) (6)
	(b) (6)	(b) (6)	—
	PAM CROUCH-DOSE	(b) (6)	Nal Assoc
	(b) (6)	(b) (6)	—
PLEASE PRINT			
PLEASE PRINT			

ADMINISTRATIVE REMOVAL

ASA218

1989

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

ADMINISTRATIVE REMOVAL

NAME	ADDRESS	REPRESENTING
INEZ GISKE	5703 N 4th	HOME OWNER
BOB WARFIELD	TEAD HALL 143 CANDLEWYCK	CITIZEN
DUK KLAN	1575 17th NE 517 B Bldg	2500 ind. - 11/1
FRANK PUZ	4701 7th Muller St Tacoma	CITIZEN
THIEME CANER	1515 1st 5th South WASH 115	CITIZEN

PLEASE PRINT

PLEASE PRINT

PLEASE PRINT

ASA218

1990

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

ADMINISTRATIVE REMOVAL

ASA218

1992

NAME	ADDRESS	REPRESENTING
(b) (6)		
PLEASE PRINT		
PLEASE PRINT		
Patricia Pearson		MacNeil-Lehrer
(b) (6)		
David Eaton	(b) (6)	C. W.
(b) (6)		
PLEASE PRINT		
Chuck O'Quinn	(b) (6)	U.S.W.A

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1993

LOCATION TACOMA, WA

	NAME	ADDRESS	REPRESENTING
PLEASE PRINT	(b) (6)	(b) (6)	self
			//
			1.
	(b) (6)	(b) (6)	
PLEASE PRINT	(b) (6)	(b) (6)	self
	DWIGHT FELT		WASHINGTON FAIR SHARE
PLEASE PRINT			

ADMINISTRATIVE REMOVAL

ASA218

1994

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

NAME	ADDRESS	REPRESENTING
<u>Ruth Weiner</u>	<u>Seattle 98115</u>	<u>Sierra Club</u>
(b) (6)	(b) (6)	(b) (6)

PLEASE
PRINT

<u>Robert L Coley</u>	(b) (6)	<u>ASCAEC</u>
(b) (6)	(b) (6)	(b) (6)

PLEASE
PRINT

<u>Gus Carlson</u>	(b) (6)	<u>Union of Concerned Citizens</u>
<u>LARRY KENNEY</u>	(b) (6)	<u>Wash. State Labor Council</u>
(b) (6)	(b) (6)	(b) (6)

PLEASE
PRINT

in the vicinity

ADMINISTRATIVE REMOVAL

ASA218

1995

13

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

NAME	ADDRESS	REPRESENTING
------	---------	--------------

(b) (6)

PLEASE
PRINT

PLEASE
PRINT

PLEASE
PRINT

ADMINISTRATIVE REMOVAL

ASA218

1996

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

NAME	ADDRESS	REPRESENTING
<u>Don GRINDELL</u>	(b) (6)	<u>S.O.U.P.</u>
(b) (6)		<u>—</u>
		<u>—</u>
		<u>Pro and Resident</u>
		<u>—</u>
		<u>RESIDENT</u>

PLEASE PRINT

PLEASE PRINT

PLEASE PRINT

ADMINISTRATIVE REMOVAL

ASA218

1997

ADMINISTRATIVE REMOVAL

ASA218

1111

DATE AUGUST 16, 1983

LOCATION TACOMA, WA

REPRESENTING

(b) (6)
(b) (6)

PLEASE
PRINT

PLEASE
PRINT

PLEASE
PRINT

 \wedge

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983

LOCATION TACOMA, WA

NAME	ADDRESS	REPRESENTING
------	---------	--------------

(b) (6)

PLEASE
PRINT

PRIVATE
CITIZEN

11

(b) (6)

LEASE
PRINT

Tacoma

Tacoma

Tacoma

Tacoma

Tacoma

Tacoma Smelter with

Private

Private

11

LEASE
PRINT

Private

ADMINISTRATIVE REMOVAL

ASA218

1999

13

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY

PUBLIC WORKSHOP

DATE AUGUST 16, 1983

LOCATION TACOMA, WA

NAME

ADDRESS

REPRESENTING

(b) (6)

PLEASE
PRINT

[REDACTED]

PLEASE
PRINT

John H. Dunder
✓ Janet Chalupnik
ELLEN HENSLEY
JAY H. HENSLEY

(b) (6)

ASARCO
Lung Assn.
ASARCO
ASARCO
TAC.

(b) (6)

PLEASE
PRINT

[REDACTED]

(b) (6)

ADMINISTRATIVE REMOVAL

ASA218

2000

13

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983

LOCATION TACOMA, WA

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

NAME	ADDRESS	REPRESENTING
(b) (6)	(b) (6)	Citizen
PLEASE PRINT VONA ADAMS	(b) (6)	Lanswell. Clinton Citizen
(b) (6)	(b) (6)	CITIZENS CITIZEN
JESSICA JEFFRIES	(b) (6)	KPMIA
PLEASE PRINT DONALD S LEINUN	(b) (6)	USWA 25 Citizen LL
(b) (6)	(b) (6)	ASAP 10 FAMILY Family
PLEASE PRINT KENNETH J JAGGEN	(b) (6)	

2000

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

ADMINISTRATIVE REMOVAL

ASA218

2002

NAME	ADDRESS	REPRESENTING
(b) (6)	(b) (6)	Self
(b) (6)	(b) (6)	Self
PLEASE PRINT Walter Adams	(b) (6)	Tahmna Audubon
TIM NOLAN	(b) (6)	PSAPCA
(b) (6)	(b) (6)	Self
Doug Pierce	(b) (6)	Tac-Pierce Co. Harbor
(b) (6)	(b) (6)	citizen
PLEASE PRINT ART VANMICKLE	(b) (6)	Self PSAPCA
(b) (6)	(b) (6)	citizen
(b) (6)	(b) (6)	Self
(b) (6)	(b) (6)	Self
PLEASE PRINT	(b) (6)	G
(b) (6)	(b) (6)	Vashon Farming

13

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983

LOCATION TACOMA, WA

NAME

ADDRESS

REPRESENTING

CHUCK + BETSY MATHIAS

(b) (6)

T.H.E.

David G. Kasper

(b) (6)

ASARCO

PLEASE
PRINT

(b) (6)

PRIVATE
CITIZEN

PLEASE
PRINT

PLEASE
PRINT

ADMINISTRATIVE REMOVAL

ASA218

2003

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

NAME

ADDRESS

REPRESENTING

(b) (6)

PLEASE
PRINT

PLEASE
PRINT

(b) (6)

PLEASE
PRINT

ADMINISTRATIVE REMOVAL

ASA218

2004

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

NAME	ADDRESS	REPRESENTING
(b) (6)	(b) (6)	HELL Plumbing
Edward A. Hallenauer	(b) (6)	MV. 5-1F
(b) (6)	(b) (6)	M. L. L.
(b) (6)	(b) (6)	Dev. Farming

PLEASE
PRINT

PLEASE
PRINT

PLEASE
PRINT

ADMINISTRATIVE REMOVAL

ASA218

2005

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

ADMINISTRATIVE REMOVAL

ASA218

2006

NAME	ADDRESS	REPRESENTING
------	---------	--------------

(b) (6)

PLEASE
PRINT

LEASE
PRINT

LEASE
PRINT

		<u>PROPERTY OWNER</u>
		<u>Property Owner</u>
		<u>"</u>
		<u>"</u>
		<u>CITY OF Tacoma,</u>
		<u>"</u>
		<u>TACOMA</u>
		<u>SO</u>
		<u>Homeowner</u>

U.S. ENVIRONMENTAL PROTECTION AGENCY
PUBLIC WORKSHOP

DATE AUGUST 16, 1983
LOCATION TACOMA, WA

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2007

NAME	ADDRESS	REPRESENTING
Neil D Mulder	Seattle / SF EPA	Contract Director
DOUG JACKMAN	TACOMA	Am. Lung Assoc
Robert Bloom	(b) (6)	ASARC
Robert Bloom	(b) (6)	ASARC
Robert Bloom	(b) (6)	ASARC
Jeff Weatherly	(b) (6)	TNT
Henry Yates	(b) (6)	Dept of Ecology myself
(b) (6)	(b) (6)	My Family
(b) (6)	(b) (6)	Myself
JOHN B. VALE	(b) (6)	ASARC
Suzanne + Don Carmichael	(b) (6)	In Guelmer
Linda Tanz	(b) (6)	League of Women Voters
John Roberts	(b) (6)	Engineering HCS
Jill Barkley	(b) (6)	LWR Tacoma

PLEASE PRINT

PLEASE PRINT

PLEASE PRINT

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

20008

U.S. Environmental Protection Agency
Public Comment Form

IV-F-10a

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

2. How can we improve the workshop agenda, speeches, discussion, etc.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

I hope the E.P.A. will take into consideration ^{all of} the economic disadvantages of allowing the smelter continue to emit the 189 tons of arsenic each year. The value of our homes and land is likely to drop markedly. Also the cost of hospitalization and other health care for people with related health problems is another disadvantage, along with probable loss of income for those who get seriously ill. Another big concern is the cumulative effect on health when one considers the multiple environmental problems of Tacoma i.e. the air, soil and water contamination ^{our residents are exposed to}.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

Taking into account the combination of all the health hazards could mean a much higher health risk than the current figures indicate.

Name: (b) (6)

Address:

Date: Tacoma, Wash 98405

September 11, 1983

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2007

(b) (6)

Tacoma, WA
EPA 98405

United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



SEP 17 1983

AIR FREIGHT BRANCH

U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2010

IV-F-106

U.S. Environmental Protection Agency
Public Comment Form

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

Allowing Asarco and/or the City of Tacoma and/or Town of Ruston should be allowed to participate in these hearings, especially during the question & answer periods would provide additional information.

2. How can we improve the workshop agenda, speeches, discussion, etc.

Same as above

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

Your model & figures are based - almost totally - on assumptions & estimates which seem to have no basis on facts - just your guesses & projections. Why should we believe your figures when even your Director has asked that the study be re-checked?

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

(b) (6)

Name

Address

Date: 8/18/83

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2011



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2012

U.S. Environmental Protection Agency
Public Comment Form

IV-F-10c

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

2. How can we improve the workshop agenda, speeches, discussion, etc.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

POISON IS POISON.... WHETHER YOU RECEIVE IT ALL AT ONCE, OR A LITTLE AT A TIME. WHILE ECONOMICS CAN'T BE OVERLOOKED, NEED THERE BE ANY QUESTION OF THE PRIORITY OF HEALTH? PERHAPS INACCURATE, MY IMPRESSION THIS FAR, IS THAT THE EPA IS TOO EQUIVOCAL IN THEIR POSITION CONCERNING THIS PRIORITY. I WOULD LIKE ARSENIC & HEAVY METAL EMISSIONS REDUCED TO A VERY SAFE LEVEL, IF NOT ALTOGETHER AND NOT REDUCED TO WHAT IS TECHNOLOGICALLY FEASIBLE; OR ELSE SHUT THE PLACE DOWN AS A HAZARD TO HEALTH. IS EVEN ONE ADDITIONAL DEATH IN, SAY, A MILLION PEOPLE JUSTIFIED? SUPPOSING THAT ONE IS YOURS OR MY CHILD OR LOVED ONE? HOW MANY JOBS IS THAT DEATH WORTH?

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

Name: (b) (6)
Address: (b) (6) WASHON, WA 98070
Date: 8-20-83

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2013

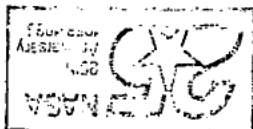


United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

IV-F-10d
U.S. Environmental Protection Agency
Public Comment Form

SEP 07 1983

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

- ① How much arsenic is in the ~~ground~~ ground?
- ② Copies of the slides shown?
- ③ Why is the plant in Texas or Mexico closed?
- ④ exactly how is this discussion ^{being} to be made?
- ⑤ there wasn't enough ~~pub~~ publicity
- ⑥ Just How many people in the area are affected?

2. How can we improve the workshop agenda, speeches, discussion, etc. To give us more time for question and discussions I didn't feel that they allowed enough time for question. And that they didn't really want to hear our comments. The speeches were very informative. I ~~learned~~ ^{learned} a lot. We live about a mile away from the smelter. What I learned scares me. There needs to be more publicity on the dates of the workshop. I found about them by calling E.P.A.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

I personally don't understand. How a business is allowed to stay open, when it pollutes the environment and affects so many people's lives. Look what it has done to the bay. We aren't even supposed to eat the bottom fish we catch. On the average of four times a week, we have emission of fallout on our car and lawn furniture. I don't feel safe letting our daughter play outside. Who to say how much arsenic she can absorb in her ~~skin~~ body from playing in the dirt. I feel the thousand or more people's lives & health are more important. Then our hundred people jobs.

We also can't eat our vegetables. In the time of a recession that would really help us out.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

(b) (6)

Name: _____

Address: _____

Date: Aug 13 1983

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2014

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2015



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

1V-F-10e
U.S. Environmental Protection Agency
Public Comment Form

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

2. How can we improve the workshop agenda, speeches, discussion, etc.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

Please be sure and consider the long term effects of these accumulated arsenic particles to future generations. Wouldn't it be terrible to be responsible for ill effects which may deprive our children and grandchildren? Let's not think only of ourselves, now.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

Name: (b) (6)
Address: *Boston, MA*
Date: *Aug 14, 1983* 98013

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2016

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2017



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

U.S. Environmental Protection Agency
Public Comment Form

IV-F-10 F

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

Have an IRS representative to explain the tax break or shelter that ASARCO would benefit by spending 4.5 million dollars to clean-up the Tacoma smelter. Let the public know that all money spent to clean-up the smelter would be given back to ASARCO thru Tax benefits. ASARCO first quarter profit for 1983 was 18 million dollars.

2. How can we improve the workshop agenda, speeches, discussion, etc.

By having one EPA representative seated around a table with 15-20 people involved in questioning answers, opinions where does the ore and concentrate come from? Why does it come to the Tacoma smelter? Give a brief run down of smelter operations at East Hobart and El Paso and their problems.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

The Tacoma smelter should be the cleanest in the world. EPA should make an example of the smelter for all industry to look up to. EPA should send a team to Japan to study and learn how the Japanese are cleaning up the air. Is the smelter causing acid rain? Butte Mines and Anaconda smelter. Butte mine and smelter are no longer producing, because labor management and government could not get their heads together. Don't let this happen to the Tacoma smelter.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

Don't let their heads together. (b) (6)

Name:

Address:

Date: 12/17/83

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2018

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2019



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



Postage and
Fees Paid
Environmental
Protection
Agency
EPA-225



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

AUG 1 9 1980

RECEIVED

U.S. Environmental Protection Agency
Public Comment Form

TV-F-10g

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

Good job, and
Comments of the
Mont EPA staff

2. How can we improve the workshop agenda, speeches, discussion, etc.

I learned that the probable reason
that ASARCO ^{Tacoma branch} ~~doesn't~~ make a profit
is because ~~it~~ sells Arsenic, 40% of
all consumed in U.S. — not because
it smelts Copper.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

Please quit hedging and recognize
that ASARCO, even with BAT, is a
public health hazard well out-
side the "ample margin of public
safety."

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

(b) (6)

Name:

Address:

Date:

Tacoma 98406
8/16/83

Notice: If the film image
is less clear than this
notice, it is due to the
quality of the document
being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2020

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2021



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

AUG 13 1986

RECEIVED

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2022

U.S. Environmental Protection Agency
Public Comment Form

IV-F-10h

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

How is it affecting Commence Bay
1) Better Fish
2) Salmon Run
3) Tourist Attractions Possibilities

2. How can we improve the workshop agenda, speeches, discussion, etc.

RECEIVED

SEP 07 1983

AIR POSTAL

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

1) Tacoma, the City smells because of Pulp Mills, To have yet the arsenic emissions added overwhelms my desire to raise my family here. St. Regis has cleared their act. It's now time for Asarco to do the same. Economically the Asarco plant is operating at a loss maybe it should be shut down & made into an industrial park.

I believe in the closure of asarco if Fed Funds at low interest rates are in the classes for use in redevelopment.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

(b) (6)

Name:

Address:

Date:

8/25/83

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

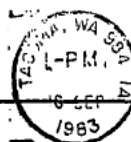
2023



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



Postage and
Fees Paid
Environmental
Protection
Agency
EPA 336



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

U.S. Environmental Protection Agency
Public Comment Form

IV-F-101

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

1) Would like information about the effects of stack fires which occurred 3 times since I moved into the Smelter area in 1973 (I live 6 blocks south of the stack). Two of the stack fires occurred in the summer time (July '77 and June '81) and resulted in turning over my vegetable garden and ruining the fruit on my pear, plum and apple trees. Twice I have trucked in new topsoil for my vegetable and twice it has been wiped out by stack fires.

2) The SO₂ relationship to emphysema should be explained more thoroughly. I am a 35 year old non smoker with 5 children. We all get bronchial problems and chest colds when temperature inversions or stagnant air cause high SO₂ concentrations.

2. How can we improve the workshop agenda, speeches, discussion, etc.

1) You could include both sides of the economic impact, i.e. presently you only mention the adverse economic impact to ASARCO or to other Tacoma area industry if ASARCO closes. Not mentioned is the economic result of declining property values, poor image for new, vibrant industries starting up in the Tacoma area, ever increasing arsenic concentrations in soil and water, destruction of marine life and other adverse results of ASARCO continuing its footdragging with respect to the environment. I specifically am having an extremely hard time selling my home due to proximity of stack.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

1) In the past The Puget Sound Air Pollution Control Agency board of governors have been generally spineless in their enforcement of EPA SO₂ emission standards. They have granted variances to ASARCO which allow them to pollute with impunity because of the political nature of the PSAPCA board. My fear is that even if Arsenic levels are set by the EPA, the Puget Sound Air Pollution Control Agency will continue to have "milktoasts" on the Board of Governors who pander to the wishes of the smeltermen's Union (e.g. Joe Storting).

2) Because of my declining health and respiratory problems of my children I have decided to move out of the 12 mile radius as soon as I can sell my home. ASARCO is gradually ruining our neighborhoods and our bay. It must close if Tacoma is to move forward economically.

All signed comment sheets will be entered into the public record. Please hand (b) (6) and mail.

Name:

(b) (6)

(b) (6)

Address:

Tacoma

Date:

Aug 17, 1983

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2024

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2025



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

IV-F-10j
U.S. Environmental Protection Agency
Public Comment Form

8-18-83

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

Find out what the people in the area want not what the Government wants. Work with the company to improve conditions at a cost that will allow them to continue operating. Ask the employees of the company who are the most affected what they would like. Base facts on actual tests not assumptions.

2. How can we improve the workshop agenda, speeches, discussion, etc.

Show the public you are working with the company to achieve the safest method at a cost the Co. can live with. National interest could produce a method less costly and maybe even safer if exposed to the nation.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

EPA. should study all types of safety systems in the world to make sure the U.S.A. is ahead or has the most up to date method to apply. The Govt should buy all the residents property within the 12 mile radius and move them or pay to move Assures to an area w/o any residential homes within 50 mile radius.

I feel you must solve a problem not create more problems by trying to solve 1 problem.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

I am in favor of Assures continuing the use of the smelter. They might have a better method to correct the problem than EPA does.

Name: _____

Address: _____

Date: _____

(b) (6)

Fed Way, WA 98013

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2026

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2027



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2028

U.S. Environmental Protection Agency
Public Comment Form

TV-F-10k

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

Public information is needed at the beginning of the process. The information is needed to help the public understand the process and the issues. The information is needed to help the public understand the process and the issues. The information is needed to help the public understand the process and the issues.

2. How can we improve the workshop agenda, speeches, discussion, etc.

The workshop agenda is good. The speeches are good. The discussion is good. The workshop agenda is good. The speeches are good. The discussion is good. The workshop agenda is good. The speeches are good. The discussion is good.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

In 1973 when my brother moved to North 45 & Street I was a landscape architect. I had the idea of a landscape architect. I had the idea of a landscape architect. I had the idea of a landscape architect. I had the idea of a landscape architect. I had the idea of a landscape architect.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

Name: (b) (6)
Address: [Redacted]
Date: [Redacted]

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

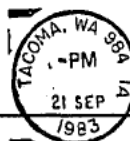
2029



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2030

IV-F-102

U.S. Environmental Protection Agency
Public Comment Form

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

2. How can we improve the workshop agenda, speeches, discussion, etc.

I would like to have (go to) another workshop before the hearing in November.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

Has the EPA considered doing hair analysis and blood tests on the children that live within a 2-3 mile area of the smelter?

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

(b) (6)

Name:

Address:

Date:

9-1-83

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2031



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101



RECEIVED

SEP 06 1983

AIR PRODUCTION SECTION

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

20332

IV-F-10 m

U.S. Environmental Protection Agency
Public Comment Form

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

I am concerned about more information becoming available about general health hazards - not just death ratios. I have a 2 yr old. We have a garden & we live within 3 miles of the smelter. What are these implications for my child ~ for pregnant women & people with lung difficulties??

2. How can we improve the workshop agenda, speeches, discussion, etc.

Please make sure updated workshops are held closer to the hearing in November. It is difficult to be an informed "pollutee" when we don't have as much accurate information as possible.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

I wonder if the EPA is concerned about the total Tacoma pollution picture? I am concerned, also that the EPA is ^{nowhere} influenced by the potential loss of jobs should ASARCO be forced to close. That, from your literature is not your mission; rather it is to "protect the public health & environment". Let us as a community be concerned about the job issue. Personally, I believe Tacoma will be more likely to attract cleaner industry to our area if standards are tougher.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

Name: (b) (6)
Address:
Date: 8/18/83

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2033



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 336



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

U.S. Environmental Protection Agency
Public Comment Form

IV-F-10h

Thank you for attending the workshop this evening. To help us evaluate our workshop and prepare for the next steps in our public review process, please tell us:

1. What additional information would be helpful to the public?

The results of the Superfund Remedial Action will be helpful in evaluating more fully the hazard.

2. How can we improve the workshop agenda, speeches, discussion, etc.

3. Are there any other comments you would like to make about the review process or about the proposed arsenic emission standards?

The review process is a much needed step in setting EPA standards. I feel the workshop was well organized and very informative in view of the limited information available.

With regard to arsenic emissions, I don't see how any emission is allowable, as arsenic is to my knowledge a cumulative problem in the soil, and any emitted will only "pile up" in the soil as has already occurred over 80+ years.

All signed comment sheets will be entered into the public record. Please hand in this form before you leave this evening, or fold, staple, and mail.

Name: (b) (6)
Address: [redacted] WASH DC
Date: 5/15 4:50 PM

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2034

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2035



United States
Environmental Protection
Agency

Official Business
Penalty for Private Use
\$300

Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle WA 98101

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335



U.S. Environmental Protection Agency, Region 10
Laurie Kral, Docket Clerk, M/S 532
1200 Sixth Avenue
Seattle, Washington 98101

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

2036

Audio tapes of the proceedings of the workshop held in Tacoma on August 16, 1983.

Original tapes are maintained in the docket in Washington, D.C.

8/16/83 TACOMA, WA WORKSHOP - ARSENIC
Group 1 - Tape 1 of 1

8/16/83 TACOMA, WA WORKSHOP - ARSENIC
Group 3 - Tape 1 of 2

8/16/83 TACOMA, WA WORKSHOP - ARSENIC
Group 3 - Tape 2 of 2

8/16/83 Kai Lee's Wrap Up at the
Tacoma, WA - Arsenic Workshop

Notice: If the film image is less clear than this notice, it is due to the quality of the document being filmed.

ADMINISTRATIVE REMOVAL

ASA218

20371

Richies
4-80-40 11-7
2nd page 4/1/1970